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AMERICAN BEE JOURNAL

JANUARY

1914

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OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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EDWARD F. BIGELOW, Editor
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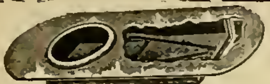

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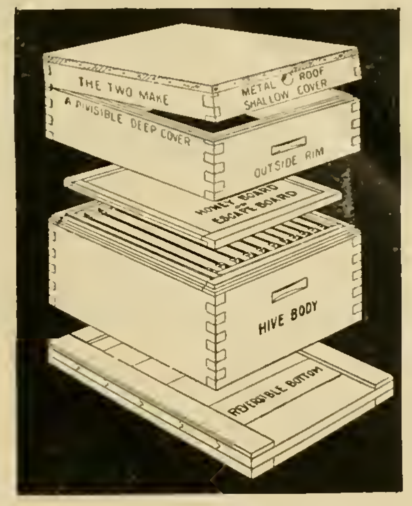

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Dead air space or packing as you prefer. ⅞ material in the outer wall. Special circular showing 10 large illustrations will explain all.

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The Beekeepers' Review

Would like very much to enroll a goodly number of new subscribers for the year 1914. Listen: Besides the 3000-colony series managed from one office, we will begin with the January number of the Review a series of articles by a beekeeper "gray with experience," that we will call the Farmers' Series, or how to produce comb honey with *two visits a year*. The Editor of the Review has looked into this system quite thoroughly, and believes that with this method that will be described in the Review during 1914, that the busy man or farmer can harvest much more comb honey per colony with this system with about a fourth of the work that is required with the ordinary system now in vogue.

We are printing 400 extra sets of the Review for the last half of 1913, and as long as they last they will be included free to all newly paid in advance subscribers for 1914. All progressive beekeepers should subscribe for two or three good bee journals. We are making a special low price on the Review when clubbed with other bee journals. Here are two good ones:

American Bee Journal one year	**$1.00**	**Both one year for**	**$1.50**
The Review " "	**1.00**		
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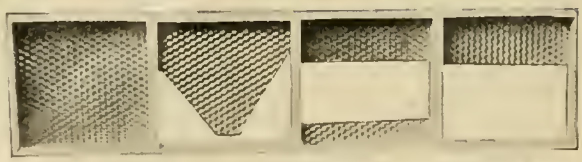

"Falcon" Foundation made in the "falcon" plant at Falconer, N. Y.

SUPPLIES FOR 1914—Take inventory of supplies now and ensure what you will need for a slim season. Get them ready at odd times in the winter; and if there is a good season you will have ample time to re-order in April and get them for use. We like to make "Inventory Sales" of "**Falcon**" supplies, for we know that we are dealing with an up-to-date beekeeper.
INVESTMENT—What is the investment of anextra $25.00 in supplies to the loss of 500 pounds of honey? Resolve to change for 1914.and buy "**Falcon**" supplies now.
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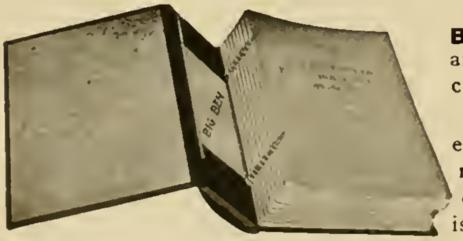

The cut illustrates the **Big Ben Binder.** It is made of heavy cloth, and is arranged so that each number can be filed as received.

We have a quantity of these made especially for our readers, with the name **American Bee Journal** in gilt on the cover. Each Binder holds the issues for three years. When bound your Bee Journals will appear to be in genuine book form. The price of this Binder alone is $1.00. We club it together with a year's subscription to the AMERICAN BEE JOURNAL, both for $1.60.

American Bee Journal, Hamilton, Illinois

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Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

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Boyd, Wis.

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W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

BARNES' Foot-Power Machinery

Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES
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Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another spesial number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL — Breeding. — Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general, No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

White Sweet Clover Seed

Sweet Clover is rapidly becoming one of the most useful things that can be grown on the farm. Its value as a honey-plant is well known to bee-keepers, but its worth as a forage-plant and also as an enricher of the soil is not so widely known. However, Sweet Clover is coming to the front very fast these days. Some years ago it was considered as a weed by those who knew no better. The former attitude of the enlightened farmer today is changing to a great respect for and appreciation of Sweet Clover, both as a food for stock and as a valuable fertilizer for poor and worn-out soils.

The seed should be sown either in the fall or early in the spring. 20 to 25 pounds per acre of unhulled seed is about the right quantity to sow. We can ship promptly at the following prices for the white variety:

Postpaid, one pound for 30 cents, or 2 pounds for 50 cents.

By express, f. o. b. Hamilton—5 pounds for 80c; 10 pounds for $1.50; 25 pounds for $3.75; 50 pounds for $7.00; or 100 pounds for $13.00.

Seed will be shipped on receipt of order

American Bee Journal,

Hamilton, Illinois.

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WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

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English Honey-Spoon.

This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to the American Bee Journal, Hamilton, Ill.

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AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JANUARY, 1914

Vol. LIV.—No. 1

Editorial Comments

The National Meeting

The National Beekeepers' Association will meet in St. Louis, Mo., Feb. 17, 18 and 19, 1914. We have no details, as this information came to hand at the time of going to press. We hope that only a part of the time will be spent in discussing the affairs of the association, and that at least one day will be devoted to a general discussion of apiary subjects. Otherwise the interest of the meeting would be confined to the authorized delegates of the affiliated associations.

Our Front Cover Picture

Our front cover picture shows the original apiary of Mr. Emile Champion, of Gergy, France, before he undertook to use movable-frame hives. Our visit to this progressive apiarist was described on pages 295, 297, September, 1913. More details will be given in future "Notes from Abroad."

Beeswax for Leaky Joints in Feeders

In this number Mr. Wilder advises that leakage of wooden joints may be prevented by running very hot beeswax around those joints. Let us emphasize those words "very hot." And as wax often expands and shrinks so as to crack, there would be some advantage in mixing a little tallow with it for that purpose. Another splendid preparation for preventing leakage or stopping cracks in barrels, wooden troughs, tanks, etc., is made with a mixture of hot beeswax, rosin and fine wood ashes. Such a preparation should be used at once, for as soon as it cools it becomes exceedingly hard.

Are Italian Bees in Tessin Immune to American Foul Brood?

We receive from a reliable Swiss apiarist a protest against the statement made by Mr. Biaggi, and inserted in the October number of the American Bee Journal, page 344, that the bees of Italian-Switzerland are immune to foul brood.

This man encloses a pamphlet published at Bern in 1910, in which it is stated that an apiary was found in Tessin, in 1909, which had 13 healthy colonies, 36 diseased, and 54 dead. This pamphlet was published by Fr. Lauenberger, chief of the foul brood inspection, and states that there was so much disease in the Canton of Tessin that a quarantine was placed at that time on the bees of that district.

Fair play compels us to insert this correction.

Odor and Scent in Bees

The reader will find in this number an article from the pen of Mr. Arthur C. Miller in reply to Dr. Bruennich on the introduction of queens. The two antagonists in this discussion are most able and fully equal to the occasion. It would therefore be a mistake to step in. There is, however, one point upon which it is as well to inform the novice who reads the discussions. There is *no doubt* that colonies and swarms queens, bees and drones have personal odor, just as much as human beings or wild fowls or game. We all know how easily a good dog will follow the trail of his master by scent. But because two strange dogs may act friendly to each other at their first meeting, it does not follow that they are unaware of the fact that they are strangers. And if two dogs from the same kennel happen to fight over a bone and keep up the fight even after the bone has disappeared, we will not deduce from this that they have suddenly become strangers to each other.

We open a hive of bees and scatter the combs, with the bees hanging to them, against neighboring objects, a tree, a hive-body, etc. In 10 to 20 minutes, if there are no robbers about, we return them and our bees will still be calm. If robbers come, they may be angry, not only at the robbers, but at their keeper, and if the thing is carried on far enough, they *may* in rare instances become angry enough to fight among themselves, like the dogs above mentioned. Is this an evidence that they do not know that they belong to the same hive?

No beings in the world, that we know of, show a better scent than bees do. They can trace honey through the key-hole of a grocery store. We have known them to come down a fireless chimney, to a room where honey was kept, crawling in through a space in the chimney-board. And as to having and recognizing a hive odor, we have seen two swarms fight on being hived together in a dearth of honey. We have seen bees crawl over our hands, because, a few minutes before, we had handled their queen. We have seen a deserted hive robbed quietly as long as one colony was doing it, but with a very strenuous fight when other colonies joined for a share in the spoils. There is no end to the instances of very positive odor and scent, enabling bees to recognize each other, however much they may be induced to accept of strangers under certain circumstances.

Dr. Miller, to whom the above remarks were referred for comments, writes:

"Arthur C. Miller says when combs of bees are leaned against trees, etc., 10 minutes or more, and then returned, a violent fight takes place. From this it will be understood by the novice that there is always danger of fighting, if combs are so exposed, even to the destruction of one-fourth of the colony. This is entirely new to me. I have thus exposed combs hundreds of times—sometimes for an hour—have had them troubled by robbers, but if there was ever a case of fighting on return to the colony, I did not know it."

Price Cutting on Honey

Nine persons out of ten believe in fostering conditions to continue competition and cut prices on every article of produce and manufacture, at all times. This view is not right, although competition should exist between similar articles from different sources. Quality is a very strong competitive point.

J. L. Byer, in this magazine for October, page 339, mentions some price cutting on Canadian honey, despite the instructions of the Canadian association and agreement of the members to hold all their honey at the fixed price. Mr. Byer does not emphasize strongly enough that no price cutting should exist on the honey of a certain quality produced by that group of beekeepers. Their product is in competition with honey of other localities, and that is enough.

What harm is there in price cutting? It eventually eliminates the weaker ones from the business. This throws the article in the hands of fewer individuals, and thus control of product and abnormal prices have come about on many things of necessity.

Various magazines recently gave prominence to an article on this subject by Louis D. Brandeis, the noted foe to monopoly. He brings out this point strongly with reference to manufactured articles. Price maintenance of a certain article of individuality is upheld. Price cutting quickly eliminates the ones of limited capital, control comes, and monopoly follows with its evil of higher prices than ever existed before. We urge you to get and read Mr. Brandeis' article, and regret that our columns cannot include it here. It may be found in "Country Life" for August, 1913.

Do not cut prices, but hold together at a fair living remunerative price. With proper distribution prices can be maintained on honey of quality.

H. C. D.

Dr. Miller and Family Returned

Doctor and Mrs. Miller and Miss Wilson returned home Dec. 18, from a five weeks' visit to Dr. Miller's son, Charles Miller, who is living in Washington, D. C. They report an enjoyable trip.

Amusing Errors

Seldom can a writer other than a beekeeper write anything about bees without getting off something that might go in the funny column. Here are two samples from a column article in the Evening Star, by an author of books:

Propolis is that with which bees "seal up the cracks and crevices of the hive before beginning to build cells."

"The queen is usually able to deposit a royal egg in the cell prepared for it. If for any reason there should be a shortage of royal eggs a worker egg is transferred into a royal cell."

Meeting of the Iowa Beekeepers

The Iowa beekeepers met at Des Moines, Dec. 10, 11, and 12. The convention was enthusiastic and numerously attended, about 120 beekeepers being present. A photograph of the meeting will be published in our next number, accompanied with an abridged report of the proceedings. The editor of the American Bee Journal was there and enjoyed it immensely. The association has very efficient officers and a number of members who are very large producers.

MISCELLANEOUS NEWS ITEMS

Minnesota Inspector's Report.—We received some time ago a very excellent little pamphlet issued under the direction of Mr. J. Alf. Holmberg, inspector of apiaries for the State of Minnesota. Mr. Holmberg, goes very thoroughly into the manner of discovering and treating foul brood. He also gives report of inspection done which is briefly as follows:

Number of apiaries inspected.......	411
" of hives........................	7,731
" of apiaries found diseased.	75
" of colonies found diseased	451
" of apiaries given treatment	74
" of apiaries reinspected....	51
" of colonies found incurable and destroyed........................	47
Number of empty hives disinfected	103

◆

A Big Crop.—The beekeepers of this section are now busy preparing their crop for market. The Rocky Mountain Bee Company, of Forsyth, Mont., has a force of eight helpers grading and casing its crop for this season, consisting of about 1500 cases of comb honey and 90,000 pounds of extracted. They have already shipped several hundred cases, and are receiving many letters from pleased customers, commending the quality and delicious flavor of the honey.—*Forsyth Times-Journal.*

◆

Poppy Culture Hinders Beekeeping in Siberia.—Consul John F. Jewell, located at Vladivostok, states in a recent report on opium culture in Siberia, that besides being contrary to the betterment of humanity "poppy culture also has a bad effect on apiculture, the productiveness of the hive falling off 75 percent."

Here, then, is an added reason for the abolition of the culture of this plant, a very insignificant reason, however, as compared with the main one stated above.

◆

Bee Meetings.—Following is a list of the bee meetings to occur within the next few months, with date and place of meeting. Other meetings will be added as the dates reach us:

Washington State Beekeepers' Association, North Yakima, Wash., Jan. 7 and 8, 1914.

Joint meeting, Western New York, Ontario and Seneca County Beekeepers' Societies, Canandaigua, N. Y., Jan. 13.

Ohio State Beekeepers' Association, Columbus, Ohio, Jan. 14 and 15.

New Jersey Beekeepers' Association, New Brunswick, N. J., Jan. 22 and 23.

Tennessee Beekeepers' Association, Nashville, Tenn., Jan 30.

Wisconsin State Beekeepers' Association, Madison, Wis., Feb. 3 and 4.

Arizona Honey Exchange, Tempe, Ariz., Feb. 7.

North Texas Beekeepers' Association, Greenville, Tex., April 1 and 2.

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Wisconsin Meeting.—The Wisconsin State Beekeepers' Association will meet in annual convention at the Capitol Building, Madison, Wis., Feb. 3 and 4, beginning at 10 a.m. Tuesday. The headquarters for beekeepers will be at Simons' Hotel. We are preparing an interesting program, and looking for a large attendance. Gus Dittmer, *Sec.*

A Belgian Opinion on the Italian Bee—Belgium is one of the most thickly settled, if not the most thickly settled country in the world. It has also the best agricultural system. In beekeeping they are leaders, and their monthly magazine, "Le Rucher Belge," is often quoted for its practical way of treating modern bee questions.

Mr. A. Wathelet, its editor, whose portrait we reproduce in this number, is a large practical apiarist, and his opinion is of value. He writes us as follows concerning the Italian bee:

Mr. A. Wathelet, of Belgium.
Editor of the "Rucher Belge;" one of the foremost bee-papers in the French language.

> "I read, in L'Apiculteur, your expression of opinion concerning the Italian bee. As a rule, the beekeepers of the Basin of the Meuse are of the same opinion, and the Italian bees pure or mixed, are to be found in almost all our apiaries."

More Improvements in Parcel Post.—According to bulletins recently sent by the Department at Washington to Postoffices over the country, commencing with Jan. 1, 1914, there is to be a change made in the parcel post.

After that date the weight limit for parcels to be sent within the 150-mile zone will be increased from 20 pounds to 50 pounds with the same rates applying, 5 cents for the first pound and 1 cent for each additional pound. This would make the charges on a 50-pound package 54 cents within the zone limit.

Outside of the 150-mile zone the weight limit is to be increased from 11 pounds, as at present, to 20 pounds. There are also material reductions in rates for these zones as compared with formerly. The department still continues the plan, however, of a varying rate increasing with the distance.

Another important change is that after March 16, books will be admitted to the parcel post at the regular rates except that on books of 8-ounce weight or less the rate will be ½ cent an ounce.

The reader will probably realize the importance of these changes. It will mean that the consumer can order a large number of things to come to him by parcel post, at least things which he is in a hurry for. For instance, within the 150-mile zone, a beekeeper who needs a crate of sections and a pound of foundation in a hurry, can order them sent by parcel post at a cost to him of about 40 cents. If he lives on a rural free delivery route the advantage will be all the more apparent.

Gradually we are approaching the system of most European countries where the limit is 100 pounds, and the rate is the same for the whole country.

Below is a list of the rates as they will apply after Jan. 1. As stated above, the limit of weight will be 50 pounds for the first two zones, and 20 pounds for the others:

	First lb	Each addi'nal lb.
Zone 1 and 2	5c	1c
" 3	6c	2c
" 4	7c	4c
" 5	8c	6c
" 6	9c	8c
" 7	11c	10c
" 8	12c	12c

New Jersey Meeting.—The annual meeting of the New Jersey Beekeepers' Association will be held at New Brunswick, N. J., Jan. 22 and 23, 1914.
E. G. Carr, *Sec.*

A Reprint of the Original Book of L. L. Langstroth.—The American Bee Journal is preparing, jointly with Gleanings in Bee Culture, a reprint of the "Hive and Honey-Bee" just as it was first issued over 60 years ago, by the man who is called everywhere "the Father of American Apiculture." The reader will find this work mentioned in the advertising columns. The book will be ready within a few weeks. Below we give the introduction prepared for it by the editor:

Reprints of old text-books are very unusual things. Few works of this kind have that honor, while novels and histories are republished by the million. It takes works likes those of Virgil or Aristotle, or quaint writings like "Isaak Walton's Compleat Angler" to interest the later generations. In the case o Mr. Langstroth's original "Hive and Honey-Bee," the student of apiculture and the book lover are both interested, and men of these two classes, though few in number, are worthy of consideration.

Three qualifications have centered the interest upon Mr. Langstroth, his accuracy of observation, his interesting diction and his invention of the most practical hive the world has ever known.

His accuracy of observation is noticeable to this day by the student of the honey-bee's habits. Many things that some of us have just discovered are to be found in Langstroth. We make over again the mistakes which he has made and corrected.

He was careful not to oppose popular fallacies without argument. Read his introduction to the subject of the "Bee Moth." After having stated, as a fact, what was firmly believed wherever bees were kept, that: "so fatal have been its ravages (the moth's) in this country that thousands have abandoned the cultivation of bees in despair," he slowly leads his reader to the truth which he had discovered, that the moth is harmless in well-kept apiaries, that: "When a colony has become hopelessly queenless, then, moth or no moth, its destruction is certain. Every year, large numbers of hives are bereft of their queen, most of which are either robbed by other bees or sacked by the bee-moth, while their owner imputes the mischief to something else than the real cause. He might just as well imagine that carrion birds or worms, which are devouring a dead horse, were the primary cause of its untimely end." This was one of the most difficult facts to impress upon the average bee-master, but every year has better shown the truth of this vigorous statement.

His interesting style and diction make the original book read like a novel. Mr. Langstroth followed no regular text-book method, and for that reason many of his statements are difficult to trace. When revising his book, at his request, after some 33 years of publication, and because his impaired health prevented him from keeping up the work, we added some two-fifths new matter, and arranged his writings in such an order that it became easier for the student to find the information he seeks. But we did this at the expense of the novel-like feature of the work.

The invention of the Langstroth hive, the most practical in existence, a hive which may be "taken apart like a puppet show," has revolutionized beekeeping. The inventions of the honey extractor by Hruschka, and of comb foundation by Mehring, the latter rendered practical by A. I. Root, would have been of but little use without such a hive. The very fault which a leading apiarist, R. L. Taylor, once found against it, that it is a rattle box, is a proof of its great convenience in manipulations. Too many new hives, fine when just emerged from the carpenter's hands, proved anything but "movable" when occupied and glued up by the bees.

After nearly 30 years of successive revisions, and some 20 different edi-

tions, making a much larger book, we now offer, side by side with it, this reprint of the original work, as a glorification of its author and an evidence of the material progress which over 60 years of time and his original teachings have brought. C. P. DADANT.
Hamilton, Ill.

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Bees in Oklahoma.—"Beekeeping is a coming industry for Oklahoma." So says Mr. A. W. Lee, of the Washita County Beekeepers' Association, in a recent letter to this office. He also enclosed a copy of a large poster gotten out by his association, to induce more of the farmers in that section to keep a few colonies of bees wherever sufficient alfalfa was raised.

Following are a few of the reports copied from the bulletin which was circulated throughout the section:

J. A. BEWLEY, 2 MILES EAST OF CORDELL, 1912.

Increased from 7 to 15 colonies, 8 gain..	$80.00
150 pounds of honey at 15c	22.50
Total gain	102.50
Less supplies	24.00
Net gain	78.50
112 percent.	

1913

Increased from 12 to 24, 12 gain, at $10..	$120.00
200 pounds of honey taken, at 15c	30.00
Total gain	150.00
Less supplies	36.00
Net gain	114.00
95 percent.	

L. L. BACHELOR, ROCKY, 1913.

Increased from 10 to 14 colonies, 4 gain.	$ 40.00
450 pounds of honey taken, at 15c	67 50
Total gain	107.50
Less supplies	12.00
Net gain	95.50
96 percent.	

MRS. ROBERT STEELE, CORDELL, 1913.

Colony purchased June 19, and by Aug. 22 had produced 82 lbs. honey, at 15c.	$ 12.30
Less supplies	.30
Net gain	12.00
120 percent.	

JOHN BOHLEN, EAST OF CORDELL, 1912.

Increased from 1 to 4 colonies, at $10...	$ 30.00
Less supplies	9.00
Net gain	21.00
210 percent.	

1913.

Increased from 6 to 7, 1 gain, at $10.....	$ 10.00
350 pounds of honey taken, at 15c	52.50
Total gain	62.50
Less supplies	3 00
Net gain	59.50
99 percent.	

The reader will notice that no deduction was made in these reports for labor expended on the bees, but even with such labor counted in, the reports would make good material for a beekeeping "boom." These reports, too, following on the excellent report given by Miss Wilson in the November number, would lead one to believe that the country is not yet overstocked to such an extent that beginners in beekeeping should be discouraged rather than encouraged.

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Colorado Meeting.—The 33d annual convention of the Colorado State Beekeepers' Association will be held at the Auditorium Hotel, Denver, Colo., Jan. 20 and 21. The usual reduced rates, half fare, will be in effect for the Live Stock Show, which will be open all the week.

Come and attend the convention, and also take in the Stock Show. We will have some exhibits of interest.
WESLEY FOSTER, *Sec.*

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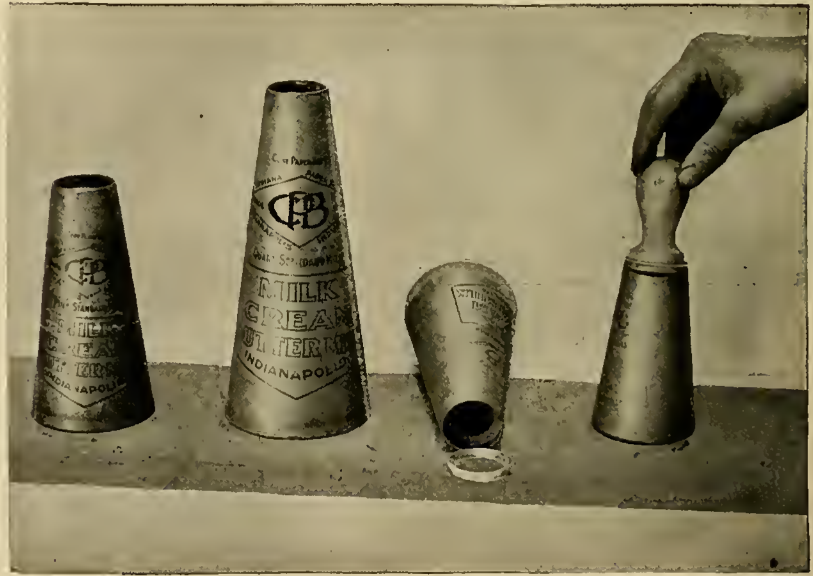
Honey by Parcel Post.—"I had wished for parcel post privileges ever since I was big enough to read, and now I am wishing that we may have the 150-mile rate extended from coast to coast," writes Mr. Walter S. Pouder, of Indianapolis, Ind., in a letter to us under date of Nov. 26.

In the mail a few days before, we had received our first honey by parcel post, a package from Mr. Pouder. It consisted of a half-pint of granulated honey put up in a paraffine paper package such as is used extensively in retailing milk, as per cut attached. The paper jar was enclosed in a cardboard box, and came through in excellent shape.

We immediately wrote to Mr. Pouder to get details of his system, asking him if he sent larger packages. He very kindly sent us a 6-pound can of liquid honey which also arrived in very good shape. It was a square can with screw top similar to the standard 60-pound cans, and was securely wrapped in corrugated paper and cardboard,

Mr. Pouder stated that he was sending 3 pound, 6 pound, and 12 pound cans safely by parcel post, and was also sending out granulated honey in half pint and pint packages. He gets 25 cents for the half-pint packages, 60 cents for the 3 pound, and $1 20 for the 6 pound within the 150-mile zone.

His success in the establishing of such a business can be in part attributed to the careful packing of these different size cans. We want to warn our readers that a single can of honey, spilled in a mail pouch, will go a long ways towards retarding the extension along these lines. The decrease in rates and the increase in weight limit will help a great deal by allowing a very strong and secure outer wrapping without increasing materially the expense of mailing.



THE PARAFFINE PAPER JARS MR. POUDER USES FOR HONEY BY PARCEL POST.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Honey and Rheumatism—How to Eat Honey

A reader saw it stated how much honey we had eaten, and kindly wrote us a few words of caution. He said he had been in the habit of eating abou two pounds of extracted honey pe week, with the result that he had brought on rheumatism. A doctor told him eating so much honey was the cause. Well, doctors and other people can say almost anything. But what are the facts? No matter has been more thoroughly settled of late by careful experiments than that rheumatism is caused by overeating of foods strong in protein, particularly the animal proteins, meat and eggs, and by not drinking water enough.

It is the waste from protein in the blood, also from tea and coffee, which waste settles in joints or muscles, that causes rheumatism It is unburned cinders, so to speak, not washed out, which make the trouble. The writer has brought on this ill purposely by eating too much protein, and then changed and cured it. He can do it again any time. While two pounds of honey a week may be more than one should eat, we do not see how it could by any possibility cause rheumatism.

We advise our friend to be satisfied with one pound a week, however, and be sure it is diluted, not eaten clear. Use it in the place of sugar. One of our folks says he craves a glass of lemonade every night, almost, before going to bed, but it does not fill the bill if sugar is left out. Well, sweeten it with honey. Honey does not have to be digested like sugar. It is ready to be at once absorbed into the circulation. If you like sugar in your wheat "coffee," you can use honey instead. And use it on rolled oats, or other food in place of sugar, if you want to do your very best. And kindly remember that Terry has no honey to sell. He is merely advising you to do as he does, which is the best he knows or can learn how. He has just ordered five gallons of extracted honey for Robert and himself.—T. B. Terry, in *Practical Farmer*.

Honey Flow Excellent

I have been keeping bees for the past six years, and I never saw such a honey flow as we had this year. I was short on supers this summer. I have 81 colonies and 125 supers, and I am ordering 50 more for next year.

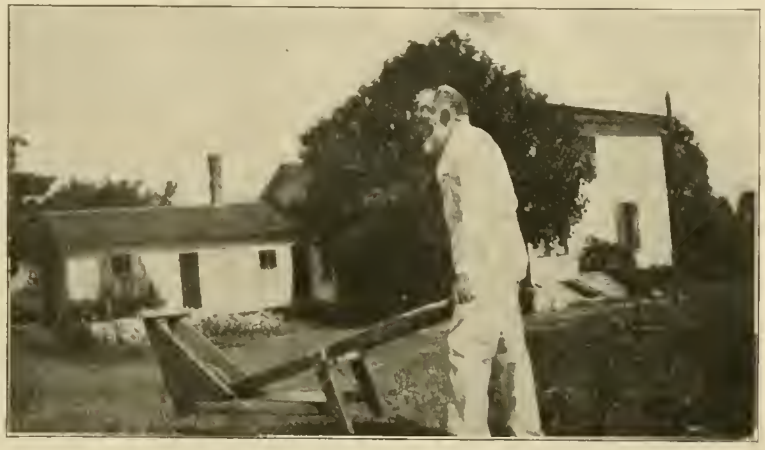
Mrs. G. B. Mays, in Her Apiary.

I am the only one to look after the bees. My husband is an express messenger, and I am alone and have my little bees for company. I enjoy them very much, and they furnish this town with honey. I handle fancy comb with my name stamped on every section I sell. At one time I kept chickens, but I sold out; I prefer to keep bees altogether. (Mrs.) G. B. Mays.

Salem, Ill.

The Wheelbarrow

Some kind of a wheeled vehicle is convenient about an apiary to save the labor of so much lifting when anything is to be carried from one point to another. One with four wheels really saves all the lifting, requiring only to be drawn. On a level surface this is best. Where the surface is very uneven the single wheel has its advantages. Unfortunately — in some respects fortunately—we live on a hill, with the ground very uneven. So we have used a wheelbarrow, or rather a succession of wheelbarrows.



Beekeeper's Wheelbarrow, Reconstucted from a Common Contractor's Wheelbarrow.

Whether because it was cheaper—costing $1.50 or so—or because it seemed very convenient to get that kind, we have always used a common contractor's wheelbarrow, the kind that comes with a wooden tray. Of course, the tray was not a convenient thing upon which to carry hives and supers, so it was taken off. That left uprights only a few inches high, upon which pieces had to be fastened to increase their height, making an affair none too substantial. A worse fault was that the tray was the chief thing that gave stability and stiffness to the barrow, and when that was removed, and the barrow became very dry in the hot weather, it was a very rickety affair, soon giving out and requiring a new one, so that after all it was not very econmical.

This summer we had one of these wheelbarrows in the last stage of decrepitude. Along came Allen Latham, and after looking at it somewhat critically he asked, "Do you think it is safe to trust a load of honey to a thing like that?" Then, after asking permission, he began to do things to that wheelbarrow. He ruthlessly tore it asunder, reducing it to its primitive elements, so that it looked as if it nevermore would be a wheelbarrow. Then he reassembled its parts, perhaps adding to them; at least he added two very substantial uprights, fastening all together very solidly, and when done it had the appearance shown in the picture.

For the purposes for which we use it, it is hard to conceive of anything better. It is light and strong. Eight section-supers of honey can be carried upon it, and a dozen or more empty supers. With a light platform and back upon it, it will carry 50 empty shipping-cases. For a heavy colony of bees it is just the thing. Every now and then, when Dr. Miller seizes that wheelbarrow, or looks upon it, he exclaims, "Blessed be Allen Latham."

Keyhole Colds

Do you know what causes a very large percent of the colds. One part of the body gets colder than the other, and it need only be an insignificant part at that. If you do not quite believe this, and are willing to make yourself the victim of an experiment, wet a portion of your wrist and hold it over a keyhole through which a draft is coming.

Watch out then for keyhole colds, for they infringe just as much upon the beauty of their owners as any other 57 or more varieties The eyes get red and puffy, the skin blotchy, and the nose red and swollen. A continual round of colds will even permanently thicken the nostrils.

With such a prospect before you, you must, at the first symptom of a cold, hie yourself to your boudoir and turn it at once into a beauty parlor. To quicken the blood circulation in your face, massage it with the spermaceti massage cream, and with a bowl of hot water and two Turkish wash cloths at hand, put two compresses on your eyes for 5 or 10 minutes. This will allay any inflammation. The nose also must have a large share of attention. To allay the swelling and inflammation, bathe it at night with balm of honey.

BALM OF HONEY.

Pure honey........................	2	ounces
Rectified spirits..................	½	ounce
Glycerin	½	"
Citric acid (pure).................	1½	drams
Essence of ambergris.......	6	drops

Mix the honey and glycerin by heating very slightly, and while the mixture is cooling, dissolve the acids in the spirits and add the essence. When the first mixture is cold, put the two together and stir until thoroughly mingled.

With this treatment administered at the very beginning of a cold your time of affliction will be brief. And thereafter don't forget to keep the body at an even temperature and so ward off the "keyhole colds."—*Chicago Record-Herald.*

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

A Visit to Marengo

Early in December the writer was in Chicago and decided to call on Dr. Miller at Marengo. But neither he nor Miss Wilson were at home, which was quite a disappointment. Dr. Miller's house stands upon a slight rise of ground, and was recognized at once from the picture I have seen. I saw a small patch of sweet clover which the Doctor evidently is trying. The bees were in the cellar under the house beside the furnace room. The weather was warm, and the thermometer in the cellar at noon registered 52 degrees, but the bees were quiet, only a few being found on the floor.

I noticed that the Doctor has no paint on his hives, as I have previously read. If he should try that *no paint scheme* in Colorado, he would be unable to keep his hives from gaping open at all the corners, and how badly all his sections would look after being wet through the cracks that would soon appear in those covers. When the Doctor finds out that the inside of his hives are all varnished by propolis, closing all the pores, as Mr. Parsons mentions, perhaps he will invest in some paint.

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Sweet Clover

In cleaning sweet clover seed there is a large amount of leaves and fine bits of stalks thrown out by the seed cleaner. This resembles alfalfa meal very much and equals it in feeding value. It is worth a cent a pound. Our cow has given a larger amount of milk since feeding this than any time since she could run on green grass. Almost enough of this sweet clover meal (I will call it) is secured to pay for the cleaning of the seed. At the Land Show in Chicago I saw a bale of sweet clover hay in the United States Government Exhibit with this explanation printed on a card: "Hay of sweet clover is much less bitter than the green plant and stock will become accustomed to it and develop a liking for it if they are forced to eat it for a few days. It is practically equal to alfalfa in feeding value."

Also in this exhibit were enlarged photographs of hulled alfalfa and sweet clover seed, showing how to tell when one or the other is adulterated. Microscopes and samples of seed were also placed so one could examine the different seeds and thus get a first-hand knowledge of how to judge seed. If the present sweet clover agitation keeps up in the farm journals and farmers' institutes, sweet clover growing is going to assume the proportions of a *rage.*

One experienced seedsman told me that he thought it a mistake to offer anything but unhulled seed on the market. His reason is that unhulled sweet clover seed cannot be adulterated without easy detection. When the seed is hulled it can be easily adulterated with weed and alfalfa seed unless alfalfa is higher than sweet clover seed, in which case adulteration would doubtless go the other way. Hulled sweet clover seed is now worth more than alfalfa seed in some markets.

◆

Heavy Snow in the West

December 4 and 5 northern Colorado was visited with one of the heaviest snowfalls in the memory of the oldest residents. It was a heavy wet snow, and measured about 45 inches at Boulder. The writer was on his way home from Iowa, and it took 4 days to get through, being delayed 3 days in Kansas and Colorado on account of the snow. The bees wintered outside are covered completely with snow measuring 12 to 15 inches over the tops of the hives. A number were shoveled out a week after the storm, and a space was found about 5 inches wide all the way around each hive, and the bees themselves were in fine condition.

The fall of snow was so heavy that many roofs were broken in, and travel all along the highways was very slow to be resumed. The snow was even heavier in the mountains, where from 5 to 7 feet fell during the storm. This makes a heavy fall of snow for the mountains so far this year with inevitably more to follow. It is my belief that a large crop of honey will be produced in the West this coming year if conditions continue favorable. We have more bees than in 1913, and other conditions are just as favorable.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Some Common Questions Asked and Answered

"MR. WILDER:—I am an amateur beebeeper, and like all such have troublesome problems, and I must turn to my more experienced friends for advice. I have 15 colonies in modern hives and 15 in box-hives which are badly scattered around, and I want to arrange them in a more systematic manner. How shall I proceed?"

ANSWER.—I would prepare the stands and place them where you want to set the bees, and then move the colonies on them. Do this during a very cold spell, and there will be no loss of bees. If you desire to arrange the hives in pairs or in rows do so, and have as many colonies as possible in the shade, but if shade is plentiful, you can arrange them in rows that will best suit your convenience.

QUESTION.—"How should I feed scrap honey or sugar syrup? Would it be a good idea to take the feed away from the apiary, say 200 yards, which is about as far as bees go for water?"

ANSWER.—I would dilute the honey with warm water until it is about as thick as thin syrup, and use feeders of some kind. You might do open feeding, as you suggest, if your neighbors have no bees—but you should not put out more feed than they would take up during the warm part of the day, and none should be put out on cool or rainy days, as a lot of bees will be chilled and lost. It would not be of much advantage to set the feed some distance away so far as robbers are concerned, for they would soon be on the scene. Of course, the feed should not be placed very near a hive.

QUESTION.—"I have tried division-board feeders and don't like them, for I have not been able to nail and wax them sufficiently to prevent leakage."

ANSWER.—If they are nailed well and do not split, then if very hot beeswax is run around the joints on the inside, they should not leak.

QUESTION.—"In October I had several light colonies; when I fed them they were destroyed by robbers. How could I have avoided this?"

ANSWER.—October is a bad time to feed bees. It should have been done about Sept. 1, when the bees were gathering a little honey from fall flowers. Then, too, you should not feed the light or weak colonies, but take the best frames of sealed honey from the strongest colonies and give them to the light ones; then contract the entrances of the weak ones to about one bee space, and feed the strong ones.

QUESTION.—"Last fall I bought 47

J. R. Dueden, of Macon, Ga., is a bee enthusiast. Limited nectar-producing plants necessitates small and scattered apiaries with him.

colonies of bees in box-hives, and when I went to move them 14 were already dead, and the rest at the point of starvation. When I arrived home I attempted to feed them, but the robbers got busy and "cleaned them all up" except 18. I placed the feed around on the tops and bottoms of the hives. Wasn't this experience?"

ANSWER.—Yes, it was, and there are many inexperienced who have bought box-hives that were robbed too close and lost. If they are not heavy with stores, and a lot of bees in them, you had better let them alone.

QUESTION.—"I bought your book, "Southern Bee Culture," and "A B C and X Y Z of Bee Culture," and I hope I will make a beekeeper yet."

ANSWER.—You should have bought these books before you started in bee-culture and posted yourself well, and your progress would have been much faster.

QUESTION.—"In spite of all I am having some success. I sold, this season, $45 worth of honey, and my best colony netted me $11, and I have not lost any bees in modern hives. I have not had many swarms this year. When the bees crowd into the hives during rainy weather, when the main honey-flow is on, will it not cause them to swarm much more than if the weather is warm and sunny?"

ANSWER.—Yes, the bees will swarm much more under such conditions as you name, especially if this is kept up two or more days, and as soon as the weather clears up we have to hustle to keep down swarming.

"I tried your method of transferring, and had good success. I expect to do more of it next season. I take Gleanings in Bee Culture, and am now sending in my subscription to the American Bee Journal. I will have a good time studying bee-culture this winter."

JAMES A. SMITH.

Lawrenceville, Ga.

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A Georgia Boy Happy Among His Bees

It seems a little strange that some people are so very happy at certain occupations, and such is the case with Mr. J. R. Dueden, of Macon, Ga., who has a number of apiaries scattered over the surrounding country, one of which is shown here, with Mr. Dueden among the hives. I doubt if a more pleasant or better-natured man could be found in the ranks of beekeepers. It seems that he is exactly suited to beekeeping; his natural talents run that way. You cannot interest him much unless you talk bees or honey. He is just "brimful" of the business, and from what he is doing at it, he and the bees make a good team.

He is not located in a section where there is great pasture for bees, and he keeps them scattered in small apiaries.

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To Visit Florida

I am planning to go to Bradentown the latter part of the winter. I have long wished to make this trip, and now as it is becoming a winter resort for beekeepers, I can't resist the pull.

I have a brother living there who once told me that the people who came there with little money, and could not board at the hotels, but lived cheaply by camping out, were known as "tin can tourists." I will have to come under that head, I guess.

Now, if any of your fellows find a handy tin can lying around, please save it for me. If there is any fun or fishing going on I am just the one to get into it, and I also enjoy swimming as well as any of the boys, even if I have been a beekeeper for over 30 years.

HARRY LATHROP.

Bridgeport, Wis., Nov. 24.

Come right on Mr. Lathrop. We will

gladly greet you in this glorious summer, sunny land. There are a lot of "tin can tourists" here, and more reported on the way, so there will be many of your class here for you to "chum" with. There is another class here called "Crackers," who are about on an equality with the "tin canners." They associate together very much, and the writer comes under this head. So far as tin cans are concerned there is a great demand for them for your purpose, but I am going to endeavor to have you a lot of nice ones saved up. And about fishing, we will see that you catch up completely, and not have any more of the fever to trouble you in some time. Swimming is fine here. The writer, in company with some other "bee-cranks" the other day, was strolling along the beautiful shell beach. When we had reached a point some distance from a residence, a surf bath was suggested, and you know the rest.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

"Away Up North" Out of the Snow

While Ohio and other central States were treated to an old-fashioned blizzard early in November, "away up North in Ontario" we have had no snow until today, Dec. 8. We are getting our first light fall of the beautiful. Editor Root made us open our eyes at the Toronto convention, when he told us of digging bees out of banks 9 feet deep, and for once at least we were thankful to be so far *north* as to escape such rigorous weather.

The vagaries of the weather are indeed wonderful, and our observatory at Toronto reports the mildest November on record. The first week of December was without a frost, and at that date pansies were still in bloom in some gardens. But it is cold today with a miniature northwest blizzard, so things will likely be normal from now on.

Bees had a fine flight on Nov. 22, and during the first three days of December they could have gotten out if necessary. Very few came out, although the thermometer went to 50 degrees—pretty good evidence that they were in no need of a flight. The chances are that they will not have another flight until late in March; but here we think nothing of the bees being housed up four months, provided the stores are good and the bees are given good protection.

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Ontario Convention—Cleaning Entrances of Snow

The 1913 convention of the Ontario Beekeepers' Association is past. As anticipated, the attendance broke the records, and the interest was maintained until the close of the last session. From over the line we had Messrs. House and Clark of New York State, and Editor E. R. Root, of Medina, Ohio. Considerable attention was given to the subject of co-operation, and while little actual work was done in the way of devising plans for a more effectual organization for selling our product, yet the discussion on the subject cannot help but be educational. Even if no immediate steps are taken, the work done may bear fruit in the future. The great question to solve in undertaking work of any extent in the line of co-operation, is the financing of the scheme. That question must be settled before any effective work can be done.

Some notes of the proceedings of the convention were taken by the writer, and at some future time I hope to give a brief synopsis of some of the best things at the meeting. Most of the discussions were along the lines of actual work in the summer time, and thus most of the good things can be given at a more seasonable time.

This reminds me that the month of January is a month above all others in which there is "nothing doing" with the bees in our northern latitudes. If one has warm honey houses to work in, comb scraping and all like work can be done at this time; but as we have no stoves in any of our bee buildings, that work is left until warm days in April, when we always have time to get the work done before the rush of the season starts.

The snow problem will present itself in many localities in January. In my own case I let all pile around the hives that chooses to drift there. We have quilts over the frames, and all winter the cases have an air-space between packing and cover of outside case. If I used sealed covers over the frames, possibly we would have to be more careful of the snow, but as I do not want the sealed covers, I let the snow go, and can see no bad results from it. On the contrary, I often wish for snow, for in the counties bordering on lake Ontario our snowfall is very often light, while north 100 miles, where we have another yard, the hives will be completely covered. But I want the snow away in time for the first flight in March, and after that period I consider it dangerous to have the hives covered again for any length of time. Snow falling in spring is heavy and wet, and with brood-rearing going on it is dangerous.

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Dr. Miller's Crop

It will now be in order for Dr. Miller to get out a new edition of his book, so as to tell us how that big crop was harvested. Really, though, that great yield is only described by one word, "magnificent." After making all allowance for the very best management, good bees, good supplies, etc., what a wonderful flow there must have been! While Ontario is a fine honey country one year with another, yet I never get any of those prolonged flows like they do in Illinois and some other States. Very often our best crops are harvested inside of two weeks, and rarely do we get a flow of four weeks from clover. In some sections of Ontario the yield was prolonged this year, but with us, although the crop was good, clover yielded less than four weeks. Congratulations Doctor, and may you get 366 sections per colony next year.

And while congratulating the Doctor on his great crop, let us not forget that in Miss Wilson he has an able helper. Who knows just how much of the credit of this big yield must be attributed to her? Personally, "the woman in the case" deserves a lot of credit for the crop we harvested, and I suspect a great many other beekeepers would have to confess the same thing.

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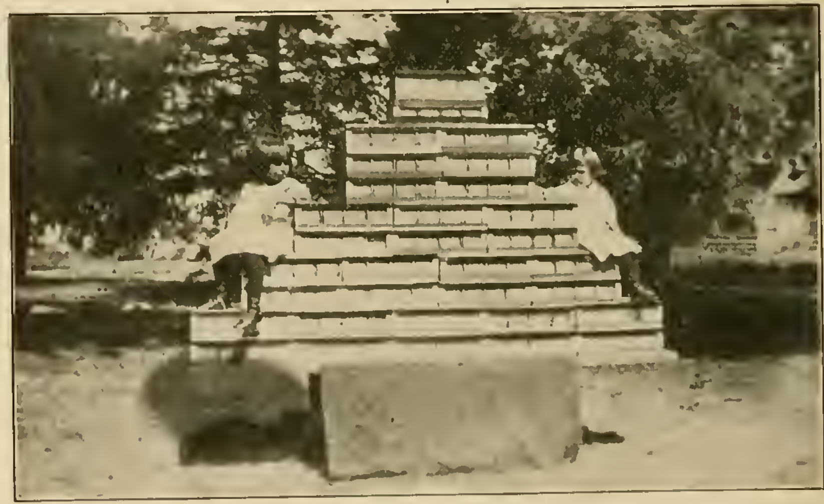
Shall We Encourage Beginners?

One thing was very much in evidence at our late convention in Toronto. This was that at present there is a lot of extracted honey still unsold in On-



Mr. Johnson, of Webster, Iowa.
800 pounds out of a crop of 1501 pounds harvested from 6 colonies in 1913.

tario. One remedy proposed is that more produce comb honey. While this advice is excellent, the change will not be made in a hurry. The writer feels that while all efforts should be made to organize and in other ways assist the present producers, it is time, if ever, for a more conservative program when influencing more to go into the business. In other words, a curtailment of production should be the slogan rather than efforts to produce more honey. This is not selfish, but only common "horse sense," and I believe the rank and file of the producers are a unit with me on this matter. Without our western market where would we be this year? And it is well to remember that much as we appreciate honey as food, yet after all it is not considered a *necessity* by the great mass of consumers. There is such a thing as over development of any industry, and I honestly believe that the honey business here in Ontario is dangerously near that point just at present. Don't be afraid to criticize if you don't agree with me.

CONVENTION PROCEEDINGS

Glimpses from the New York State Beekeepers' Convention

BY F. GREINER.

An animated beekeepers' convention, which was well attended, was held in Rochester, N. Y., on Dec. 2 and 3. The reader might be interested in some of the discussions held and addresses delivered, and if I may be allowed, I will here mention some interesting features as they occurred.

As to setting and maintaining the price of honey, it was stated by Mr. S. D. House, that in Canada they had successfully settled that question. Crop reports were gathered all over the land by the beekeepers' society, and a special committee then decided what the price should be for the season. So successful had they been that even the wholesale dealers had been abiding by these decisions. The association voted to give this method a trial.

In a general discussion about capping melters, it was brought out that it was best to allow cappings to drain for a day or more, and then use a capping melter.

Mr. E. R. Root said that honey should not be left long in contact with hot wax. Some used a water-jacketed boiler to melt the cappings, the same being provided with a spout allowing honey and wax to escape as fast as it had melted sufficiently. Mr. Baldridge, from Kendaia, uses such a one at the close of the day's work.

That it is a necessity for the extensive beekeeper to keep a record of each colony is disputed by few. Mr. Case utilizes broken sections for the purpose. A piece of tin is nailed to the side of each hive, forming a pocket, as it were; this receives the piece of section and protects it from the rains, etc. This pocket must be of the right depth so as to leave the piece of section protruding just a trifle.

Why so much difference in the yields of different colonies was explained by Mr. G. S. Demuth, from the Department of Entomology at Washington, D. C., in a very novel way. Four factors, he said, were responsible for the differences in honey yield in different seasons and with different colonies. First, source of the nectar; secondly, weather conditions; thirdly, number of workers in the hive; fourth, public sentiment for storing (storing instinct must be dominant). Mr. Demuth compared the conditions to a game of dice. Imagine, he said, each condition to be represented by one of the little cubes, the six sides of each numbered from one to six; cast them on the table; you may imagine that the aces may come up on all four, but it is rarely to be expected. When it happens in beekeeping you have a bumper crop.

Only the third and fourth factors enumerated are under the control of the apiarist, and the more successful he is in keeping the conditions right the better the results. It is probable there will always be a lack of uniformity in results with most beekeepers. The breeding of a bee which has the storing instinct to an intensified degree, he recommended.

In the following discussion Mr. House and Mr. Dines, from Camillus, N. Y., championed their sectional hive, asserting that with such a one it was much easier to manage to bring about that contentment within the hive necessary for storing the greatest amount of surplus.

Shall extracted honey be retailed in the granulated form was the next subject, and Mr. C. B. Howard held that granulated honey should be so sold, kept for sale in the manner as cheese is sliced off from blocks in quantities wanted.

Mr. E. R. Root showed granulated honey put up for retail trade in paper cartons, weighing about 1¼ pounds, something which would fill the bill it would seem. He stated that to cut up granulated honey into squares of the desired size, the tin was stripped from the honey, or, if in barrels, the staves were taken down, then by means of tightly stretched wires the block of solid honey was cut up. Mr. Root said: "You cannot cut honey, soap, tallow, etc., with knives, but taut wires will do it. When the honey is in proper shape the cubes are wrapped in paraffine paper and slid into the cartons. It may be called honey-spread or honey-butter. Comb honey may also be put up in cartons, but must be left to drain for 24 hours after being cut up into squares."

In the question-box a standard for goldens was demanded. It was conceded by the majority that the workers of such a strain should be golden all over except the extreme tip end of the body. A few others held that a bee possessing three or four golden bands might claim the distinction "Goldens" as against the leather-colored strain of Italians.

Markings of other bees were discussed. It was shown that there was very little difference between brown or black bees (Carniolans, Banats and Caucasians). Mr. Root said even experts were often puzzled.

Before adjournment it was decided to hold a special meeting at Cornell farmers' week in February, and the next regular meeting in Syracuse during December, 1914.

Naples, N. Y.

Quebec Meeting of Beekeepers

The annual meeting of the association of beekeepers of the province of Quebec. took place in the Government offices at Montreal, Nov. 2. About a hundred members were present. Dr. Emery Lalonde presided.

After the reading of the minutes the following officers were elected:

Honorary Chairman—J. E. Caron, Minister of Agriculture.
Chairman—Dr. Emery Lalonde.
Vice-Chairman—A. L. Beaudin.
Secretary-Treasurer—A. O. Comiré.

The financial statement showed receipts from the Government grant $200, and from membership dues $126. After paying the year's expenses there was a balance in the treasury of $37.61.

Statistics concerning the production of honey in the province were furnished by the Minister of Agriculture. The latter complained that the association had failed to furnish such full information as was necessary concerning crops. To this it was replied that the association covered too large a territory to be able to furnish full statistics.

A request was made to the Government for a continuation of the annual grant, and that it be increased to $300. The Government was also asked for an allowance of $1000 for the purchase of Italian queens.

It was decided to ask for a change in the inspection law to increase the power of the inspectors, to forbid the keeping of bees in hives with immovable combs, to prevent the importation within the province of infected bees or implements, and to increase the fine for infractions of the law concerning the spraying of fruit trees during bloom.

Lectures were afterwards given by Mr. Morley Pettit, Provincial Apiarist of Ontario, L. M. Grignon, Chas. Péloquin, and Mr. Beaulne, Assistant Entomologist of the Ottawa Experimental Farm.

On the second day, lectures were given by J. C. Magan, Michel Dufault, and J. F. Prud'homme.

An exhibit of honey, both comb and extracted, was made, and prizes given to the following exhibitors: L. J. Comiré, Vincent Benoît, and A. L. Beaudin.

In the afternoon, Mr. Harry Jones exhibited cages for shipping bees by the pound. Mr. Beaulne gave a conference on outdoor wintering, such as is practiced at the Ottawa Experimental Farm. Mr. J. A. Vaillancourt, of Montreal, gave a talk on the sale of honey and the best methods of packing it.

The meeting ended with a report of A. O. Comiré, inspector, on the work of inspection during the past season.

A vote of thanks was offered to the different speakers, and the meeting adjourned.

Minnesota State Beekepers' Meeting

Increasing interest in the art of producing honey by the Minnesota beekeepers could be readily recognized on entering the hall occupied by the Minnesota Beekeepers' Association on Dec. 3. About 100, which included many ladies, was the average attendance of the sessions for two days. Beekeepers of the fair sex took prominent part in the meeting.

Both the small beekeeper and specialist were there to profit by the numbers on the program, which were all ably presented. That one can learn to produce honey in carload quantities with a few years' experience and persistent effort, was shown by Mr. E. L. Hoffman, of Janesville, who held the attention of the convention, telling "How My Bees Produced 30 Tons of Extracted Honey this Season." In about 600 colonies of bees, swarming was almost entirely prevented by proper manipulation, and some 4000 sheets of Langstroth size foundation drawn out. The energetic and intelligent beekeeper can get the crop, but a vast amount of work is required to produce results, and actually prevent swarming with the use of the Langstroth and smaller sized hives.

Beekeepers are eager to see sweet clover grown in their locality, but it is only by being tactful that they can induce their neighbor farmers to grow it. Let the farmer know its value as a fertilizer and forage crop. After interesting his neighbor and distributing Farmers' Bulletin, No. 145, on Sweet Clover, of the United States Department of Agriculture, R. F. Hall, of New Auburn, Minn., was enabled to sell all the sweet clover seed that he could produce. Sweet clover seems to be more valuable in the central States than alfalfa. It is still on the list of obnoxious weeds in Minnesota, but this will soon be rectified, and with a new bulletin on clovers, which will soon be out, sweet clover will be officially placed where it belongs, above both timothy and red clover in value as a forage.

Minnesota beekeepers, and beekeepers in general throughout this country, have been leading a movement for education and experimentation in their respective States. Those in charge of the State Agricultural Station recognize this, and are making every effort to respond to the demands of the people. Quarters to house the new department of apiculture in beekeeping are being prepared. Announcement is made by Prof. Francis Jager, that the week beginning Jan. 19, is scheduled for the first free short course in beekeeping in the Farm School. This is open to persons of any age wishing to broaden their knowledge of beekeeping, and every one can be assured in advance of useful instruction to be given by Father Jager, whose apiary is a model one and whose ideas are progressive.

The Experiment Station will take immediate steps for the improvement of the races of bees, particularly with the Carniolans. Best wishes for your efforts, Prof. Jager. Your idea of too small quarters usually afforded the Carniolan queen is well taken. About 40 years ago Charles Dadant threw aside the Langstroth sized hive for one with 40 percent larger brood-chamber to accommodate the capacity of the Italian bee, which saved him excessive manipulation and double decked bodies.

An experimental bee-cellar arranged to absorb and evaporate the moisture which collects in the form of a heavy frost inside the cellar, will be tried this winter by Dr. L. D. Leonard, of Minneapolis, the present secretary-treasurer of the Minnesota Beekeepers' Association. Information concerning the best methods of wintering in Minnesota would be of benefit to its beekeepers.

R. F. Hall, of New Auburn, Minn.

Mr. Hall is a sweet clover enthusiast who has interested his neighbors and influenced them to grow it for profit. Incidentally it helps his bees. Notice the sweet clover back of the hives. Mr. Hall read a paper on "Sweet Clover" at the Minneapolis meeting.

The State Fair exhibit as an advertising and educational medium is probably quite as valuable as the contest for prizes. A larger allowance for prizes has been recommended by Mr. Scott La Monte, Superintendent of the Apiary Department of the State Fair Board. The large and first-class exhibits this year deserve more recognition in the way of bigger prizes.

The organization of a Honey Exchange is urged by L. F. Sampson, of Excelsior, whose experience in selling his fruit crop in that way has been very satisfactory. Honey, however, does not appear to the consumers in general as almost a necessity, so the demand for honey is lighter than for fruits. The producer with a retail trade of his own will not turn over his crop to a Honey Exchange, even though it may be a properly conducted co-operative association..

Minnesota beekeepers appreciate the services of their State inspector, J. A. Holmberg, 1241 Edgerton St., St. Paul, His last report may be secured by sending to the above address.

Mr. P. J. Doll, President; Mr. Scott La Monte, 1st Vice-President; and Mr. L. V. Rodecker, 2d Vice-President, were re-elected as officers of the association. Dr. L. D. Leonard was elected Secretary-Treasurer.

Executive Committee: P. J. Doll, C. A. Palmer. L. F. Sampson, L. V. Bodecker, and L. C. Pilcher.

Meeting of Michigan Beekeepers' Association

The Michigan Beekeepers' Association held their meeting at the Y. M. C. A. Building in Detroit on Dec. 10 and 11. This was an enthusiastic meeting, and the excellent program arranged by the President and Secretary left nothing to be desired.

In his address, Pres. Jenner E. Morse urged the convention to take steps to secure more members for the association. There is no doubt that the greatest progress can be made only by the co-operation of all the beekeepers in the State.

Mr. L. S. Griggs, of Flint, talked on how he produced and sold comb honey. Mr. Griggs produces both comb and extracted honey, and is as successful a beekeeper as can be found in the State. Many subscribers will recognize Mr. Griggs' address as that of our old friend, W. Z. Hutchinson. In fact, Mr. Griggs purchased Mr. Hutchinson's apiary shortly after his death, and is meeting with great success.

The convention was entertained by lantern slides on the subject of "Pollenization." Prof. R. H. Pettit, of Lansing, gave views of the bees at work on different flowers. The process of carrying pollen from one flower to another, either on the abdomen or back of bees, was plainly shown.

Mr. E. B. Tyrrell, Secretary of the National Beekeepers' Association, gave an address on "Imagination as Applied to the Bee Business." Mr. Tyrrell's pictures were for the beekeeper who was in the least inclined to build air castles. Migratory beekeeping was especially mentioned in his talk.

The association was especially fortunate in having with them Mr. J. P. Munson, of the Michigan Horticultural Society. Mr. Munson, in his talk, showed plainly the difficulties that beset the fruit grower when spraying his trees, and in return asked that the beekeepers teach why the fruit grower should have consideration for bees. There was no room left for doubt that the bees cannot puncture fruit, and that they were necessary for the pollenation of fruit flowers.

A. H. Guernsey, of Ionia, Mich.,
With a runaway swarm. The swarm was found on a limb 1¾ inches through, 40 feet from the ground. It had combs 2 feet long and 13 inches deep. The bees were safely captured and taken to a photograph gallery and afterward exhibited on the streets for several hours.

Michigan is especially fortunate in having secured the sevices of Mr. F. E. Millen as State Inspector of Apiaries. His address to the convention on the subject of "Cause, Treatment and Eradication of Foul Brood" was excellent. Mr. Millen has had considerable experience with foul brood, and we are sure that if the beekeepers give him the required assistance the war on foul brood in Michigan will succeed.

Mr. A. G. Woodman, of Grand Rapids, in showing various beekeepers' appliances, gave a description of his new combined section folder and foundation fastener. This little machine gives promise of being a winner among beekeepers who produce comb honey. Mr. Woodman showed how top and bottom starters could be put in a section all at one operation. Most foundation fasteners put the foundation on one side of the section only, but this machine places it on two sides, top and bottom, with exactness.

Beekeeping in the colleges was the subject of the address by Prof. Morley Pettit, of Guelph, Ont. As Michigan is just starting on this subject, the address was listened to with great interest. The Ontario Beekeepers' Association has nearly 1500 members, and the audience was told how these members were secured, and what the work at the Ontario Agricultural College was doing for the students in college.

It was very much regretted by the beekeepers present that Mr. Ira D. Bartlett could not be at the convention, but a short paper by him was read on "Wintering Bees Out-of-Doors." The subject assigned to Mr. Bartlett was "Wintering Bees on Summer Stands," but Mr. Bartlett's experience has been wholly with wintering bees in clusters of four, and not simply on the original summer stands.

Mr. D. Running, of Filion, Mich., gave a very interesting talk on his method of wintering bees in cellars, and also gave a description of a cellar he has built for the express purpose of wintering all his colonies. There is no doubt that in his location cellar wintering is the best method of carrying bees through the winter.

The editor of the Beekeepers' Review, Mr. Townsend, talked on "The Production of Extracted Honey." As stated in the Review a few months ago, Mr. Townsend and his sons practice wintering their bees with a shallow super full of honey just above the brood-chamber. This extra super is for the purpose of ensuring plentiful stores up until apple bloom, and even until white clover yields in the spring.

The meeting of the association will be held at the Michigan Agricultural College in Lansing, Mich., next year.

* * *

The Missouri Meeting at Excelsior Springs

The meeting of the Missouri beekeepers at this famous resort, on Dec. 16 and 17, 1913, proved very efficient. Important steps were taken. The membership fee has thus far been only 50 cents, but it was decided that more funds were needed both for paying expenses and with a view to incorporate so as to form a permanent organization similar to the Agricultural and Horticultural associations. The fee was raised to $1.00. A committee was appointed to consider incorporation and securing an appropriation from the State Legislature, for the purpose of publishing the proceedings and all important information in the fight against diseases, also for co-operation in securing better prices for honey. A revision of the constitution was also contemplated.

Interesting papers were read by E. E. Lawrence, Clay Foley, H. C. Gadberry, Dr. A. D. Wolfe, W. T. Cary, and C. C. Clemons. The latter gentleman terrified his audience by facetiously producing an enormous roll, which purported to be an address, but turned out to be blank paper. His address, which was excellent, treated of the experiences of the commission merchant and of the best methods of grading honey for the market.

The editor of the American Bee Journal gave a half hour talk on beekeeping in Europe.

The president, J. W. Rouse, gave considerable information concerning foul brood and the failure to secure a law by only one vote of minority. He urged the beekeepers to do as was done in Illinois in a similar circumstance, write to their representatives individually and demand their support of the measure. The attitude of the convention indicated that very strenuous efforts will be made in this direction at the next session of the Missouri Legislature.

A resolution was passed granting to the secretary 25 percent of the membership dues as an indemnity of his labors. The association nominated the city of Columbia as the next place of meeting, subject to the decision of the executive committee. Resolutions were passed in favor of a course in beekeeping at

This apiary produced 2000 pounds of comb honey for its owner in 1913. It belongs to Ed. J. Johnson, of Postville, Iowa.

the Agricultural College of Missouri.

At the suggestion of Mr. Gadberry, a committee was appointed to ask the Board of Agriculture for an increase of the present premiums at the State Fair, to at least $500: in view of the fact that the State of Minnesota gives over $1000 for that purpose.

The election of officers resulted as follows: President, J. W. Rouse; Vice-President, H. C. Gadberry; Secretary-Treasurer, J F. Diemer.

Such meetings are very pleasant and exceedingly useful. But they should be more fully attended. Instead of 25 or 30, there should be 150 beekeepers in attendance. Those who fail to attend do not realize how much they miss.

NOTES FROM ABROAD

Traveling Through France

BY C. P. DADANT.

WE left Paris on July 14, which, as explained before, is the same as our American 4th. We wanted to avoid the crowds and get a good night of sleep. The streets were filling, the flags swinging, and the soldiers marching towards the field of Longchamps, for the annual parade. We turned our backs on all this and took a train, via Reims, for Grandpré, in northeastern France. The surroundings of Paris are beautiful, and on the way we admired the avenues, the gardens, the groves, which show training beyond our American ways. Wife had no idea of the curious shapes into which trees may be trained and trimmed, and of the possibility of having shaded avenues in which not a single limb is allowed to extend farther than the others to the distance of 6 inches.

The trip from Paris to Reims, 98 miles, was made in 2 hours. But beyond that, we were in a local train which made 20 stops, and took exactly 2½ hours to cover 40 miles. This was commented upon by an American traveler, who remarked that if they had kept on at the same rate as at first, they would have run clear out of France, into Belgium, before the time was up.

Grandpré (see the cuts) is on a hillside, crowded together as are most European villages, with the church in the center and the inevitable castle on the hill overlooking the village. The church, of the 16th century, contains the tombs of the dukes De Joyeuse.

At the station house a limping old man, pushing a wheelbarrow in front of him, offered to guide us to the hotel. As there are two hotels in this small place, there is a little competition, and our porter secured a glass of wine as a reward from the landlady, for guiding us to the hotel Didion, the farthest house in the rear of the picture below the castle. The old lady, a kindly looking, bearded woman, informed us that the price of her best room, with two beds was 1 franc 50, or 30 cents. The meals were 50 cents each. This we thought rather high in a country place, but when dinner was served, with six courses, in a quaint dining-room all to ourselves, we thought it cheap enough.

If the reader will refer to the September account of our voyage, he will see that our trip to Grandpré was for the purpose of visiting the birth place of my wife's mother, and if possible ascertain whether there were any relatives of hers still living there. So, after our meal, we called the hostess and began asking questions. She directed us, at our request, to one of the oldest ladies in the village, and we were soon informed that we still had in this village two second cousins. All doubts were removed when, upon further enquiry, we were told by the cousins in question that they had heard their grandmother say that she had relatives in America who kept a large lot of bees. The family pictures were brought out; we exhibited some which we had brought ourselves, and this made matters clear. It was over 20 years since any correspondence had been exchanged, and the old folks were all dead. But the acquaintance was joyfully renewed, with much wonder on their part that any one should come so far to see relatives.

The rest of that day was spent in meeting French peasants, visiting their homes, their pretty gardens, narrow lanes, green paths and white roads.

When evening came, our expected restful night was apparently jeopardized by a ball on the public square shown in the picture, right in front of the hotel, exactly in the same fashion as the free-for-all balls of the Paris celebration. We realized then that the whole of France had a dancing floor that night wherever a smooth public square was found. But at 11 o'clock it rained, and this put an end to the ball, so we had a peaceful night after all.

I reported in the September number visiting a beekeeper, who is also a candle-maker in that village. His skill is remarkable in making beautiful white wax candles, with fine wax ornaments that resemble leaves and blossoms, mouldings, etc.; the whole thing with the help of only a few tools of his own devising. But is this any more wonderful than the hand carving of the magnificent stone sculptures so delicate and gauze-like that we saw everywhere in the Old World?

This man's bees are in his back lot, a pretty vegetable garden surrounded, as usual, with old mossy walls. Every inch of available space is in use, the walls even being latticed, and fruit-trees trained and fastened to the trellis. The production of extracted honey is almost universal there, and he uses our half-story method of extracting supers. Our name was very familiar to him, since he uses our hive. Their crops are not large, the yield being confined to some varieties of centaurea, basswood, a little alfalfa and white clover. In reply to my questions concerning the May disease, our so-called paralysis, he called it vertigo, and ascribed its existence to the honey of the "centaurea jacea." As this disease exists in different countries with entirely different flora, I believe that opinion erroneous.

His method of fastening foundation is rather remarkable. He uses in the brood frames a horizontal wire within a quarter inch (5 millimeters) of the underside of the top-bar. He holds very rationally that, since the greater part of the strain is supported by the upper portion of the sheet, it is this part which must be strengthened. As a rule, we place the top wire too low in the frame. He and most other manufacturers work their foundation at home with a Rietsche press. It uses about twice as much wax as the cylinders. It does not seem profitable.

After another day partly spent in this pretty village, and a visit to the old

GRANDPRÉ (Ardennes). - Vue générale, prise du Chateau
LE FAMILISTERE

Bird's eye view of the old village of Grandpré.

castle, we again took the train. This time we aimed to reach the city of my birth, old Langres. But a ride across country to the south would have necessitated our changing trains four times in as many hours. So we returned to Reims, where one of the main lines of the "Est" (eastern railroad) could be reached again. In this way we made but one change. We took advantage of the stop in Reims, where we spent the night, to visit the old cathedral, where the kings of France were usually crowned and anointed. It was there that Joan of Arc witnessed the crowning of King Charles VII, whom she had helped to regain his kingdom, in 1430.

When you reach a strange city, it is always more or less of a problem to make sure of a good reasonable-priced hotel. But we had none of this trouble during our trip. Upon our arrival in France, our good friend and prudent adviser, Mr. Crépieux-Jamin, provided us with a letter of introduction to the "Touring Club De France," of which he is one of the oldest members and representatives. By his instructions we called at the offices of this famous organization, 65 Avenue de la Grande Armée, Paris, presented our credentials, and in 15 minutes we were supplied with a card of membership, a pretty badge, three guide books, giving the names and address of the best hotels in each city of France and of the countries that we were about to visit, with prices of rooms, meals, etc.; lists of automobile garages, addresses of machinists, with prices of repairs agreed upon for either automobiles or bicycles, a list of the places of interest in each city or around it, of the local dishes and beverages of each place, etc. All this for the insignificant sum of 9 francs 50 ($1.90). The price of the subscription without guides is only $1.00, and they give in addition a year of the monthly magazine entitled, "Touring Club De France."

But this is not all. As a member one is entitled to discounts at many of the hotels, and the amount of discount with a copy of contract is mentioned in the Guide. Our card of membership which I have retained, since it is good for a year, bears the number 279,500. If you wish to travel in Europe, by all means secure a membership in the "Touring Club De France." You may also join that of Switzerland, or of Italy, but do not miss the first, if you can secure proper credentials. It is a great satisfaction, when you reach a strange place, to be able to give to the railroad porter, who carries your baggage, the name of the hotel you have selected, to be sure that you can get a room such as you desire, in a reliable house, at a stated figure, and not pay exorbitant prices for your meals. In addition, you are welcomed by the hotel manager as a member of a powerful fraternity of travelers.

By the way, the hotel manager in Europe is usually a very pleasant lady; none of your American hotel clerks who look upon you with disdain unless you wear the latest style of clothes and are ready to order the very best room. In fashionable hotels in America, I have sometimes been made to feel that the clerk was only condescending to permit me to remain, if I behaved. Don't understand me as intimating that all the hotel clerks are of that sort, but the best of them are hardly a affable as the hotel people of the Old World.

GRANDPRÉ (Ardennes.) · La Place
LE FAMILISTÈRE
Vve Gady, éditeur

Another view of Grandpré, where Mr. and Mrs. Dadant visited while in Europe.

CONTRIBUTED ARTICLES~

The Chaff Hive

BY DR. A. F. BONNEY.

IN an early day before cellars for bees were invented, the chaff hive was in its glory; but because it was a bulky affair, being made of full one-inch lumber with 4 inches of space between walls, it was about as immovable as a house, and when beekeepers began counting their colonies by the score, they looked about for something lighter.

Notwithstanding the neglect accorded the chaff hive in years past, it is, I think, the only one for the farmer, small beekeeper in town, and, for that matter, the professional. As I am neither, I am in a position to judge, and with the farmer losing his few colonies every winter with the common hive, the man with 50 or more trying to pack or cellar, and the big fellow with hundreds which are taken out in the spring to "spring dwindle," I think there can be no argument regarding the necessity of some good, safe way to winter bees, and that way I know to be the chaff hive, at any rate for the small beekeeper—to avoid argument. It must be remembered that Mr. Holtermann, of Canada, abandoned a $1000 cellar to winter out-of-doors. Why does he not use chaff hives? I suppose he has a thousand of the others.

Very few beginners have ever seen such a home for the bees, and a small description of it may not be amiss. Briefly, a chaff hive has spaces protected by four walls, each packed with some porous material, as chaff, from which the hive got its name; the finer parts of shredded cornstalks, which the writer "discovered;" ground corncobs, first recommended by the Root people, I think; planer shavings, excelsior, or even straw. The object in packing is to break up the confined air into small spaces, and thus prevent it from circulating. There is nothing inherently "warm" in either of them. If one lives adjacent to a timber he will find dry forest leaves one of the very best things to pack with.

But these packed walls are, I believe, of secondary importance to the protection given the top of the hive, for no matter how warm the walls, if the top of the hive is cold, or if there be an escape of heat upwards, the bees will suffer; so when you combine the packed cover, sides and ends you have something approaching the bees' natural home in a hollow tree, a waterproof cavity, open at the bottom, which is, above, practically air tight, and with an entrance vastly larger than ever given by man, which, I think, tends to give hardier bees. Moreover, there is but little danger that this entrance will ever become clogged by dead bees.

There are at the present time but three chaff hives on the market, and those are put out by the Woodman Co., the Root people, and the Falconer Company. The first mentioned has an outer shell of ¾-inch lumber, and an inner of ⅜. There is what is called a winter rim, which, like the cover, sets in a rabbet, flush with the walls of the brood-chamber. It has the old "chaff tray," which I never use, putting my packing in the winter rim on top the super cover instead, while it may be put into sacks and used year after year. There are two holes in the cover, in the ends, for "the escape of moisture," but these I plug with corks, as I do not believe we can have an upward escape of moisture without a corresponding loss of heat. However, this is not said to excite discussion.

The Root hive has a thicker packed space than the others, but has a thin ⅜-inch outer wall and no handles, or at least had none some months ago. They use the chaff tray, and must, for the cover telescopes over the tray and brood-chamber. The great objection to this hive was removed when, at my suggestion, they made a loose bottom for it. It may be well to state that the Root people winter a thousand colonies of bees in chaff hives in Medina; they so wrote me a year ago.

The Falconer hive is very similar to the others, but instead of lock or dovetail joints the walls are fastened to four corner posts. If given a choice between dovetail hives for out-of-door wintering and putting the bees in a cellar, I'll take either of these hives, because being warm the bees begin breeding early, earlier than in the cellar. Of course, some more stores may be used, for you cannot have fire without fuel, and it may be that up to the first of June not much more feed will be required in the chaff hive than in the cellar, and not so much when results are considered. Remember there is no setting bees out of a cozy, warm cellar into the changing April weather to dwindle away. Also, they are cooler in summer without shading, and do not require as much ventilation as the dovetail. while I use an abundance.

If evidence of the value of the chaff hive were lacking, I had it and to spare in the spring of 1913. I had in 1912 lost about all my bees from total lack of clover and other pasture, combined with a dreadful drouth, and the colonies I had in the spring of 1913 were mere handfuls of bees the first of May, but these same colonies gave me an average of 300 pounds to the colony. This was due, of course, to the tremendous flow of nectar, but under any other conditions than the chaff hive I would have had no bees to get it.

All these chaff hives have, I believe, entrances that are too small. Moreover they are apt to clog with dead bees. If the entrance blocks were put in upside down, it would give more space for dead bees to accumulate, but with 6 inches of good, dry packing on top the brood-chamber and the walls packed, a ¾x3-inch entrance is none too large to ensure pure air in the hive. Protect this entrance from mice with wire-mesh if necessary, using the kind the masons do to sift sand through.

If, 40 years ago, the chaff hive had been cheaper than the dovetail or box-hive, there would probably be no other kind in use today, and while today the cost of the protected hive is but little more than the other, the slight additional cost will still induce buyers to seek the cheaper line of goods, while the saving of one good colony would, in many cases, pay all the extra cost.

I feel like telling prospective users of the chaff hives something the manufacturers do not, and that is that *all* joints in the hives should be laid in thick white lead to make them as near water tight as possible, then give the hives a good painting with white lead and linseed oil. I also advise the purchase, in the flat, of one of each of the hives I have mentioned, so that you will be able to judge. I think it almost a waste of time and money to buy anything smaller than the 10-frame size in either make. Use a metal-roofed cover, and in the winter a couple crate staples to hold the cover in place will prevent some worry.

Finally, the entrance of the chaff hive *must* be low enough to let all storm water drain off the bottom-board to the end that the hive remain dry.

Buck Grove, Iowa.

[We much prefer a long, shallow entrance, too shallow for the mice to crawl through, to a ¾-inch entrance with wire mesh small enough to keep the mice out. Bees will carry out almost anything that needs taking out through a long entrance, but the wire mesh is everlastingly in the way. A 5-16th entrance, cut true, will keep out mice.—Editor.]

Odors and Queen Introduction

BY ARTHUR C. MILLER.

THE article by Dr. Bruennich, in the American Bee Journal for November, places considerable emphasis on odor as of importance in behavior of bees one to another. Until we have more definite and accurate data on the behavior of bees in the presence of known odors, it is almost idle to seriously discuss

Apiary of K. Okushima, in Japan.

Mr. K. Okushima, of Japan, at Work.

the value of odors to them in determining their actions. However, some observations of mine may be of interest, and perhaps help others in their work.

Long ago, on discovering the true way bees obtain food from each other, which was exactly the opposite of what was universally taught and believed, I assumed that possibly some, perhaps many other teachings were equally wrong. As I was then particularly interested in queen behavior and introduction, I turned to the odor factor as a promising field for study. I soon became convinced that it did not play the important part assigned to it, and there followed the experiments which have resulted in the new method of introduction. From the already excellent results achieved by others as well as myself with that method, my unbelief was not without profit.

Finding that I could introduce any queen to any colony, I proceeded to test odors on queens thus run in. Queens were anointed with all sorts of odors—as had previously been tried on marked workers and drones—and such queens were introduced by the above-mentioned method. Sometimes a queen would be introduced to half a dozen colonies the same day, and in other cases a queen would be reperfumed and reintroduced to the same colony several times on the same or subsequent days. The results always sustained my belief in the negative importance of odor. Various perfumes, essential oils, saliva, tobacco juice, perspiration, odors from the skin of horses and dogs and other things were used, and so long as these things did not cause physical discomfort to the queen, the bees seemed to be unconcerned by their presence on the queen. Perfumes (alcoholic extracts) essential oils and some other substances caused quite apparent distress to the queen, the oils quickly causing death except when used in the most minute quantities. When distressed the behavior of the queens was not normal, and as was to be expected their reception by the bees varied widely.

Though bees possess a most acute sense of smell it does not follow that the odor of the individual bee governs its reception by an alien colony. It seems more reasonable to think that the individual bee recognizes a colony odor different from the home odor, and is thereby caused to behave in such a way as to invite attack. And yet when some colonies have the combs with adhering bees separated, the combs being stood around against convenient objects as trees, buildings, etc., on being returned to the hive again in 10 or more minutes, a violent fight takes place between the bees of all the adjacent combs, until sometimes a quarter or more of the whole colony is destroyed. Surely, the home odor had not evaporated from all those combs and the new ones been absorbed by them and the adhering bees. Odor fails to explain there.

Dr. Bruennich's theory of the old guardian bees being the trouble makers is not borne out in experiments, for with colonies so long queenless as to have laying workers, and with those more rare cases where after 6, 8, or 10 weeks of queenlessness no such egg producers appear, and where, of course, all the bees are of the guard class, queens can be run in with perfect ease.

I beg leave to interject here a bit of advice to the novice who may read this. To colonies so long queenless give a comb or two of emerging brood that proper nurses may be on hand to feed well the brood soon to appear from the eggs of the new queen.

To what degree odor governs the behavior of one bee to another we may never know; but we do know that by ignoring this factor altogether and by merely getting the bees into a turmoil, we can do with queens what we never could do when working on the odor theory.

I do not hesitate to introduce by the new method any queen no matter how valuable she is, and regardless of whence she comes, either from near at hand or from far away. So uniformly successful is the procedure that I use no other, and never have the slightest anxiety as to the safety of any of them.

Furthermore, I have found it possible to successfully introduce queens to colonies containing laying queens, and usually the reigning queen is displaced. Several factors are very evidently involved here, for the results are not yet uniform. I have been for some time studying to determine what are the factors, and I believe the time is near

Virginia Waterleaf Blooming in Frank C. Pellett's Wild-flower Garden at Atlantic, Iowa.
The Waterleaf is a Good Honey Plant, Blooming in Early Spring.

at hand when we shall regularly do our *requeening without dequeening.*

Providence, R. I.

Shall We Encourage More Beginners?

BY FRANK C. PELLETT.

On page 274, of the November number of the American Bee Journal, Mr. Byer has an article entitled, "Too Much Rosiness." From the trend of his remarks, I am inclined to the notion that he is of the number who would not encourage large numbers of persons to enter the business of honey production. Similar protests appear so frequently, that I am constrained to take the opposite view. While there are many who take too rosy views of things and offer too much encouragement, the tendency is entirely too much in the opposite direction.

Find me a prosperous community anywhere and I will show you where there is much interest in the business in which the greater number of persons are engaged. Here in Iowa, the communities where fruit growing is profitable are where it is highly developed. In my own county, there is hardly an up-to-date fruit grower engaged in the business on a commercial scale. Every farm has a few fruit trees; and apples, and sometime other fruits, especially plums, are a drug on the local market in the fruit season. What surplus there is goes to market in any old package, and half of it rots in the grocery store. In several nearby counties fruit growing receives much attention; the profits of the orchards are published widely, and the fruit prepared for market in the best possible way. In those counties the orchards pay, and pay big. I know some of their owners personally, and know that they receive cash returns from their crops that make their stock-raising neighbors fairly green with envy.

If we expect beekeeping to be regarded as a desirable occupation, we must not be afraid to say that it is so. On the other hand, every inducement must be offered to beginners to join the associations, attend the conventions and subscribe for the bee journals. In my work as an inspector, I seldom find a man who is a reader of a bee journal who needs much help from me. They frequently have had no experience with disease, and desire some instructions, but they are familiar with bees in general, and understand how to proceed with the directions given. It is the slovenly, back lot, box-hive beekeeper who takes a little honey to market in bad condition and sells it for a song, who spoils the market and makes conditions disagreeable. I know markets where the business beekeepers have been so persistent in educating the public in regard to honey that prices rule high, and when the slovenly beekeeper brings his junk to town he cannot sell it at all without peddling it from house to house.

In my opinion, if the business of honey production is to take rank along with other lines, we must always put the best side out, and educate the public until a man would be as much ashamed to keep bees in box-hives without attention as he would to farm as his grandfather did.

Of course, we should always take pains to inform those interested of the fact that beekeeping is a science, and that it takes more brains to be a successful beekeeper than to succeed at most ordinary callings. The real facts should be stated freely and without regard to the number of persons who may become interested in beekeeping. In fact, I fully believe that the prosperity of the profession will increase with the increasing interest. More people interested will call the business more prominently to public attention, and demand for the apiarists' products will be increased accordingly. Here in Iowa, our oldest and most successful beekeepers are most enthusiastic about interesting new men in the business, and it is the policy of the association to bring the honey-producers' interests before the public as frequently and forcibly as possible.

J. J. Wilder, of Georgia, is a conspicuous example of what can be done with bees by the right man. The fact that there have been a thousand failures, to one such conspicuous success, only emphasizes the fact that the limitations are limitations of the man, and not of the business. Of course, we all agree that there should always be a proper amount of caution as to what can reasonably be expected in the way of financial returns. To be afraid of enthusiasm about one's business for fear of possible competition, is to admit our inability to meet competition. If the business of honey production had long been held up as one of the most desirable occupations, the beekeeper would be looked up to, instead of sneered at. When everybody wants to keep bees, the public will awaken to the fact that it requires special skill to be successful, and skill always demands respect.

Atlantic, Iowa.

Comb Honey—Sections Well Filled

BY J. E. HAND.

On page 383, is an article under the above heading by G. M. Doolittle, setting forth the undesirable features connected with the perfect filling of sections with honey. I fully realize my perilous position in expressing views that run counter to those advocated by so able an exponent of apicultural lore, and my dangerous habit of fearlessly expressing by honest convictions regardless of who, or how many, are on the other side will perhaps result in disaster to my preconceived ideas, as usual. A casual reading of the article mentioned suggested the idea that it would perhaps have been more appropriate in the columns of a popular magazine, especially since it contains no information for beekeepers, its chief office evidently being to instruct the housewife how to select a section of honey, as well as instructing Bridget how to cut it out of the section without enough drip to pay for licking the knife.

Assuming that Bridget and the housewife are to be the judges in the discussion, I will begin by addressing a few remarks to Bridget: "Miss Malloy, begging your pardon, I notice you have a fine section of honey already to cut out of the wood. I also notice that the cells are capped solid to the wood, while the other one has a row of empty cells next to the wood all around it. Will you please tell me why you choose the well-filled one in preference to the other?"

"I choose the fat one, your honor, for the same reason that I would select a fat chicken instead of a lean one. We are going to have 'quality' to dinner, and this section is whiter as well as fatter."

Addressing the house-wife: "Mrs. Skinner, that is a very fine section of honey."

"Oh, yes; it will do very well for common use; but I don't like it because of the row of empty cells clear around it, which presents an unfinished appearance, that of having been pulled too soon. We buy them by the piece, and when buying the fat ones I get full value for my money."

Allowing Bridget and the house-wife to judge, Mr. Doolittle has lost his case. If he objects to such a one-sided examination, permit me to suggest that it is as fair for me to draw on my imagination for facts as it is for him; and I venture the assertion that nine intelligent women in ten will give about the same answer.

There is another angle to the situation that Mr. Doolittle has entirely overlooked, and it is the most important point of all. We are often compelled to ship section honey long distances by freight in cold weather. Any one at all acquainted with the nature of empty combs in cold weather knows that a slight jar is sufficient to dislodge a section of honey having a row of empty cells around it. In fact, we never use a knife to remove such honey in cold weather, simply give it a tunk sidewise, and out it goes.

On the contrary, a section of honey capped solid to the wood may be dropped flatwise upon a table in cold weather repeatedly without dislodging the contents. In fact, the colder the weather the more waxy the honey becomes, and the more it will adhere to the wood, and the only way it can be removed is with a thin-bladed knife. This desirable feature enables us to ship such honey by freight and guarantee safe delivery to any destination, whereas a sudden drop or jar sidewise might result in disaster to sections not well filled out and capped to the wood. Undoubtedly Mr. Doolittle is able to pack such honey so as to stand shipment reasonably well; but others may not possess that knowledge, and the result will be disastrous in the hands of the inexperienced.

I have had many section-honey troubles, but the least of them has been the fear that the bees would cap the cells solid to the wood; and if Mr. Doolittle has a lot of such honey, he is very fortunate, especially since it will command the highest market price, stand shipment by freight, and please the purchaser upon arrival to its destination.

Since these three points include the

most desirable features in section-honey production, I stoutly maintain that the perfect filling and capping of section honey is highly desirable. Since the perfect filling of sections is the exception and not the rule, it would seem that the evils, so eloquently portrayed by our worthy friend, are more imaginary than real; and it seems ungenerous to deprive Bridget of the privilege of licking the knife after cutting out a section of honey. Mr. Doolittle would go still further and deprive her of the pleasure of licking the plate after the "quality" has consumed the honey. Oh, G. M.!

Birmingham, Ohio.

Is It Necessary to Start Small To Be Successful?

BY GEO. F. LESTER.

I HAVE read many articles advising beginners to start with one or two colonies, and build up as they get experience. But is it necessary? I am not advising all beginners to start in on a large scale, but if a person has a "knack" for handling bees, together with good common sense, and the help he can get from bee journals and books on beekeeping, I believe he can attain success.

In January, 1909, I bought 40 colonies of bees in all kinds of hives, together with 40 extracting bodies with drawn combs, extractor, 60 comb honey supers, etc., paying $200 for the outfit.

I knew nothing about beekeeping, but sent for "Langstroth on the Honey Bee," subscribed for two bee journals and started in. Of course, I made plenty of mistakes, but did not make the same one twice. The winter had been warm and the bees were out of honey, so I had to feed from the start until June 15, when the alfalfa began to bloom. By this time they had built up good and strong. I ran them for extracted honey, and they made me $6 a colony. I increased to 60 by dividing, and did not lose any the next winter.

"The earmarks" of a successful season. Mr. Lester believes that success can be attained through attention and perseverance. He uses this policy.

The next year I had about the same luck. I ran for extracted honey mostly and increased to 90, introduced four dozen Banat queens that I got from Texas, and received about $450 for my honey.

The next winter I only lost two colonies, and in the spring bought 19 at a sale. As foul brood was getting so bad around the county, I decided to quit extracting and run for comb honey almost entirely. Last year was a very poor season, but I increased to 165 and harvested $900 worth of honey.

This brings me down to the present year, 1913. Last year my bees were in three different places, and I put in so much time on the road that I decided to move them all to one yard, and move out there and stay during the summer. This is the yard in the picture with my work tent in sight. My wife was called to Michigan, so I had to do my own cooking. She expects to be with me next summer.

A very nice lay out for a "Beginnner." Mr. Geo. F. Lester in his apiary.

Last winter was the coldest ever known here, the mercury going down to 35 degrees below, and as the bees were all wintered on the summer stands, it was hard on them. But I came through with only two dead, but had several weak ones, and when I got through doubling up I only had 150 left.

The spring was cold and backward, and no honey from fruit bloom, so I had to feed from May 10 to June 10. This I did by making a flat trough 2 inches deep out of a plank 6 feet long and 12 inches wide. I spread a piece of burlap over this, filled a 5-gallon can with syrup and inverted it in the trough, letting it rest on two strips, so that the opening in the can was about ½ inch from the bottom of the trough. This made a self feeder, and the burlap kept the bees from drowning. I presume some people will ask, did you not feed a lot of your neighbors bees? I suppose I did feed a few, but as it only took my bees two hours to empty the can, they did not get much, and what they did get was more than over-balanced by the good that the outdoor feeding did. I fed 5 gallons a day after I had divided all the honey in the hives, and had them practically clear of honey.

The weather was getting warm, and the outdoor feeding made them build up rapidly so that when alfalfa started to bloom (June 10) my bees were in fine shape.

As I had had poor luck getting good queens from queen breeders to start new swarms, I concluded to try and rear my own. This I did by the Doolittle method, and had good luck, getting as high as 30 out of 38 cells accepted at one time. I used these for starting new colonies and for requeening. I did my requeening in August. I would watch my queen-cells and see how many were accepted, and then go to the same number of hives and kill the old queens. In six or eight days I would put in a ripe queen-cell in a

West protector. In one or two days the young queen would hatch and proceed to tear down all cells that were started, and do a cleaner job than I could, besides saving the time going through those hives and cutting out the cells.

I reared over 100 fine cells in one hive during the season, and got 10 supers of honey from the same hive, and did not have a queen in the hive from May 10 to Aug. 15. I kept from three to five frames of hatching brood in the hive all the time.

I clip all my queens and mark the year in which they were clipped on the back of the hive. In this way I can tell just how old each queen is by looking on the hive.

I have never had much trouble with swarming, but this year the bees all over this section got the fever, and how they did swarm! But it happened in August, during our heaviest honey-flow, so I did not try to hive any swarms. Instead, when a colony started to swarm, I would catch the old queen, put her in a cage and place it in front of the hive, and when the swarm had returned I would kill the old queen if I did not want to save her. If I did I would use her to requeen some other colony. In six or seven days I would go through the hives that had swarmed, and cut out all queen-cells but one. In this way I did not lose much honey, and I have a young queen for next year. I have about 150 young queens out of 208, and most of the rest are only one year old. Of course I lost some in mating, but had young laying queens in small hives to replace those that were lost.

This year I harvested 615 cases of finished comb honey and 25 cases (250 gallons) of extracted, increased to 280 colonies, did all my work alone, and only had 450 supers to do it with. Next year I expect to increase to 300.

Is it necessary to start with one or two colonies to become successful? I think not.

Delta, Colo.

Short Cuts to Section Honey

BY L. HARRIS.

IN the American Bee Journal for November, I notice an article on page 376 by Dr. Bonney, on short cuts to section honey. Some years ago we secured a splendid lot of section honey. There was an excellent demand for it, and before the real honey selling began (in the fall) we had sold our whole product.

We happened to have a beautiful lot of half-depth frames of sealed honey, and the idea occurred to us that we might be able to cut these up for section honey.

Accordingly we made a form and placed a lot of these full sealed combs in sections and placed them on the colony which had been our best comb-honey producer. The sections looked nice when they were inserted; all filled to the wood, and we were flattering ourselves on our good invention.

But, alas! we had forgotten to reckon with the bees. The first thing they did was to tear down the two rows of cells next to the wood, so as to get at the midrib which they fixed to the wood at the center. That was all the fixing they would do, although they were fed and fed. Not a drop would they put around the edges where they had removed the honey to get at the midrib.

The sections were finally taken off. Whenever a section happened to be turned over on its side, if not very careful, it broke away from the wood entirely. The sections could not be shipped at all without breaking, which, of course, would spoil them. Instead of having a beautiful lot of section honey, we had a lot of chunks of honey, neither comb nor extracted.

To those who are at all fascinated with the short cut idea, I would say "go slow" or you may be sorry you cut your nice combs to pieces.

Vernon, B. C.

Beekeepers I Have Known—"Eugene Secor"

BY FRANK C. PELLETT.

AMONG the beekeepers of the middle West, none is more widely known than Hon. Eugene Secor, of Forest City, Iowa, and if a man's true wealth is measured by the number of his friends. he is one of the richest men of my acqaintance.

Mr. Secor has had his share of honors, having been for a time a member of the Iowa legislature, and for several years postmaster at Forest City. At present he is a director of the Iowa State Horticultural Society, which society is supported by the State, and he has held many similar positions. Both beekeeping and horticultural pursuits attract high class men, and it is remarkable what a large percentage of those engaged in these pursuits are of the finer sort. Mr. Secor is both a beekeeper and a horticulturist, and has been for nearly half a century, all of this time making his home at "The Shelter," where he still resides. Of things horticultural, his greatest interest is in the peony, and he has written much concerning it, both for the publications of the Iowa Horticultural Society and the various journals to which he is a contributor. Of late he has given considerable attention to the production of new varieties, and his efforts in this direction have not been without recompense, for among his creations are some promising new sorts.

HON. EUGENE SECOR FORMERLY PRESIDENT OF THE NATIONAL BEEKEEPERS' ASSOCIATON.

It is with Secor the beekeeper, however, that this sketch has principally to deal. Those who have been regular attendants at the conventions of the National Association, all know Secor and his songs. A number of them have been set to music and sung at these conventions. Among them may be mentioned "The Hum of the Bees in the Apple Tree Bloom," "The Beekeeper's Lullaby," and "Buckwheat Cakes and Honey." The spirit of the man is well shown in the following extract from one of his poems, "When the Bees are Coming Home:"

"What fools we mortals be!" We fume and fret
Because of life's unceasing round of toil,
Permitting gold our happiness to spoil,
When love and service are the holy oil
That blesses all the wealth we need to get.

The soft, low hum that falls upon our ears
As darkness creeps upon the glowing west,
Is labor's song proclaiming that the best
Of all that's good is found through daily quest—
And duty leaves no time for useless tears.

He has written poetry for many years, and not long since a little volume of his poems was published by Successful Farming, of which his son Alson is editor. This volume is entitled, "Verse for Little Folks and Others." The title fits the book all right, for the writer's 10-year old son, "Kent," reads the poems with much interest, while the writer himself has read the "Bobtail Rooster" and the "Pumpkin-Seed Calf" so many times that they bid fair to be committed to memory.

Although a beekeeper for nearly 50 years, Mr. Secor is very modest, and must be urged to take a place on the program of a beekeepers' convention, saying that he feels like one who is merely playing with bees. How often it is thus, that those best fitted to teach are slowest to recognize the merit of their own offerings.

I cannot refrain from quoting a few lines from another of his poems entitled, "About a Bee:"

"Here's a bee, my children see,
Gathering sweets for you and me.
On Sir Dandy Lion's crown
She is yellow that was brown;
Yellow with the golden dust
Lent to her in solemn trust;
Blossoms bart'ring gold for gold
Through this dusty trader bold.
Dandy Lion seeks a bride,
Sends his offering far and wide
By his trusty friend the bee,
And with honey pays the fee."

No one not a naturalist as well as a beekeeper could write such lines as these, and also the following taken from the next verse:

"Hairy legs are good for bees.
Therefore she has six of these;
She has baskets on her knees
T' carry bread for baby bees."

It is manifestly impossible to write about Secor the beekeeper as other than the beekeeper's poet. His love for bees, like his love for birds and flowers, finds expression in verse, and I am not sure but life to him is a glad sweet song. Though shadows have crossed his path, and some of them very deep ones, he seems always able to see the silver lining of every cloud. Since the death of Mrs. Secor, his companion for many years, he remains in his old home with his daughter, "Miss Nina," who is like her father in many ways, and the two find much that is good in life together.

It is not the writer's disposition to envy any man, for he is well content with his own lot. Were it given, however, to choose the results of another's life work, he would not take the fortune of Rockefeller, nor yet the glory of Dewey's warfare, nor yet the honors of Taft or Roosevelt. More to be desired, it would seem, is Eugene Secor's remarkable life time harvest of friendship.

Atlantic, Iowa.

* * *

Comb or Extracted Honey?

BY DR. C. C. MILLER.

IT is a common thing for a beginner to ask the question: "Can I make more money on extracted honey than on comb?" With the expectation of an immediate reply, Yes or No. It is not a question to be answered off hand in that way. A number of things must be taken into consideration, and then it will generally be left for the beginner to decide for himself, perhaps after a little experimenting with both kinds of honey.

There are experienced and successful beekeepers who produce extracted honey. That is a pretty clear proof that they find extracted more profitable than comb. But there are also experienced and successful beekeepers who produce only comb. Just as clearly they think comb more profitable *for them.*

It may be well to mention some of the items that are factors in the case. Other things being equal, comb honey may well have the preference, because it brings a higher price, perhaps a half more. On the other hand it is generally believed that about a half more extracted than comb can be produced. Some, however, say that with them the difference is not so great as to the amount produced. Possibly the location may have something to do with this. Then, too, there are localities where a pound of extracted brings nearly if not quite as much as a pound of comb.

In some regions the flow of nectar is of short duration, but comes in a flood while it lasts. In others the flow is light but long continued. The former is favorable for comb, the latter for extracted.

In some places there is a prejudice in favor of comb honey; in some places it is the other way. The beekeeper must, at least to some extent, cater to the wishes of his customers.

Where the harvest is mostly of dark honey of strong flavor, the preference is for extracted honey, for such honey may be sold for baking and other purposes, while lighter honey is desired for sections. Perhaps this may not apply to the same degree where bulk-comb honey is produced. Indeed in some places the whole problem will be solved by the production of this style of honey, requiring both comb and extracted.

It requires more skill to produce comb honey, and more labor in the apiary during the harvest time. The swarming problem is vastly more troublesome with comb than with extracted honey. All this makes it possible to keep a larger number of bees, and so to get more honey by extracting.

A MORAL QUESTION.

In settling the question as to whether one should produce comb or extracted honey, it is perhaps right to say that there is a sort of moral point of view in the case. Will one do more good by producing extracted or comb honey? We are told in the French bee journal, l'Apiculteur, that an up-to-date physician, Dr. Carton, has written a brochure in which he makes the somewhat startling statement that the three most deadly aliments are alcohol, meat, and sugar. No unprejudiced person is likely to question the deadliness of alcohol. Some of our leading writers are inclined to view with complacency the present high price of meat as a blessing in disguise, believing that a reduction in the amount of meat consumed will be for the health of the people. But it is not so generally understood that the large amount of sugar consumed, especially in this country, when the annual consumption by every man, woman, and child averages more than 80 pounds, is accountable for much ill health and many deaths. When cane sugar is eaten it must be inverted before it can be assimilated, and when an unreasonable amount is consumed the heavy burden thrown upon the digestive organs and the kidneys is too much for them, and they become diseased.

On the other hand, if honey takes the place of sugar there is no such danger, for the sugar in honey is already inverted, ready for immediate assimilation. Whoever, therefore, is the means of getting the public to use honey in the place of sugar is doing just so much to conserve the public health and to prevent loss of life through inordinate consumption of cane sugar. Hence, the moral aspect. And with this view in mind, the question is, which will secure the largest consumption of honey, producing it in the form of comb or extracted honey?

Two factors come in here: First, the better a thing tastes, the more people will want to eat it. Second, the less a thing costs the more of it can be sold. As to the first of these items, there would probably be a general agreement that comb honey tastes better than extracted. We are told that the essential oils that give to honey its delightful aroma are better preserved in comb than in extracted honey. Along with this goes the matter of looks, and in this respect comb honey is far ahead. A beautiful, snow-white section of honey graces the table for company as can no sample of extracted honey in whatever kind of dish. When honey is eaten on hot cakes, the convenience of extracted honey gives it the preference.

It is only fair to say that while the aroma of comb honey excels that of extracted, the quality of honey is improved by being left a considerable time in the care of the bees. The whiter the cappings, the better comb honey sells. So sections must be hurried off the hive as soon as sealed lest they become darkened. In extracting combs, however, it may be left on three times as long, giving it a richness and ripeness not to be secured in the very white sections. So it may be possible that this richness and ripeness may offset any superiority in the way of preservation of volatile oils in comb honey.

There are wealthy people with whom the matter of cost cuts little or no figure, and with them the looks of comb honey will give it the preference. Indeed, if there were no choice either as to taste or looks, there are a few who would prefer the higher-priced just because of its higher price. The great middle class, however, if they can get extracted honey that is thoroughly ripened and of best quality, will be certain to find the difference in price of more importance than any difference in quality they can recognize; and the poorer classes who find the price of comb honey prohibitive may still feel that they can afford to buy extracted. So it would seem that with the difference in price likely to prevail always, more extracted than comb will be sold. Or, taking a very general view of the case, the man who produces extracted honey produces

A pet colony of Henry C. Barron at Hagerman, New Mexico. Mr. Barron operates a large number of colonies in the southwest.

more than he would of comb, and the more honey that is produced the more honey is eaten.

The man who produces a crop of comb honey is doing a good thing for the public; it is possible that the man who produces a crop of extracted honey is doing just a little better thing for the public.

Marengo, Ill.

The Life of a Bee Inspector

BY F. DUNDAS TODD.

FOUL Brood Inspector is my official title, but although I have been employed in the Government service of British Columbia for three successive years, I have never had a chance to work at my trade. I have opened up many thousand hives in that time, but have never found any foul brood to inspect. I am always looking for the disease, but continually hoping never to see it, and so far I consider myself and the province very lucky.

Of course, I get a scare once in a while. For instance, the past summer one beekeeper, in the most casual way, informed me that seven of his colonies were infected in the spring, but that he got rid of the trouble. He is a fine beekeeper of the student type, so he plays all kinds of "stunts" with his hives to satisfy his craving for knowledge; too frequently to his hurt so far as honey crop counts. His knowledge of the English language is far from being good, and I have to patiently catechise him, examine him, re-examine him, do it all over again. then some more, before I begin to comprehend what he is anxious to tell me. I feel I need to take a pound of salt with some of the statements he makes about bee conduct; but I know he will patiently lie in front of a hive for a day at a time, keeping his eyes fixed on the bees, so I cannot off hand say to him, "That cannot be so." I tried it once, but the chunks of broken English he hurled at me almost scared me off.

So, when, in telling me of some of his recent observations, he lamented the fact that they were interrupted by the advent of foul brood, I naturally upset the even tenor of his way by wanting to know particulars, but he hastily interjected, "That's all right; I fix them," and then proceeded with the main theme of his story. I heard him out, and then got his interest centered on the matter of chief interest to me. How did the infection reach his bees?

A neighbor, it seems, had a can of honey sent to him from Ontario, and after the contents were consumed the empty receptacle was thrown into the rubbish heap. One day the neighbor invited Henry to come over and see what a fine feed was being provided for his bees, and he accepted the invitation. The moment he saw the feed he realized the risk, so he opened up every hive afterwards and found affected brood in seven. Luckily, it was in spring with little in the hives, so every drop of the find had been fed to the brood at once. The beekeeper never hesitated a moment, but cut out the affected combs and burned them in the stove.

I examined every colony very carefully, but could see nothing wrong. The nearest apiaries were fully a mile away, and they also appeared all right; but all of them will be closely watched another season. So far as we know we have a clean bill of health in British Columbia, and we want to keep the province in that condition.

Now whether this was a real case of foul brood I do not know, but the incident is illustrative of how the disease may be spread. It is the third case of introduction into the province of which I have cognizance. One was brought in by a settler from Ontario, and luckily the suspicious case was reported to the Department of Agriculture before neighboring apiaries had been affected. In another case a beekeeper who had been visiting his early home in England, decided to bring back with him some fine British stock, but he brought more than he intended.

No attempt was made to cure in either of these cases; they were wiped out by fire. We bee inspectors of British Columbia do not intend at present to earn reputations as being men who can cure the ailment. Since we are free of it we deem it the higher wisdom to ruthlessly destroy by fire every case that comes under our notice.

Need I say that I follow closely every word in the bee journals that is written on the subject of foul brood, and since I have had no experience in treating it, many readers may think it unwise, if not worse, of me to express any opinion on the subject; but, nevertheless, I have had much experience with the ordinary beekeeper; perhaps a closer and more intimate relationship than falls to the lot of the average inspector; for my real work is giving instruction in apiculture, so I have developed some notions that I want to express.

First, let me give an outline of our conditions. The province of British Columbia is a huge territory in which are settled less than half a million people, 75 percent of whom are located on the lower reaches of the Fraser river. Most of them are new to the work at which they are laboring, so our Government, with great wisdom and forethought, is working hard to educate those on the land. The Department of Agriculture has a force of about three dozen experts at work; as fine a body of men as one could wish to see, all anxious to provide a full meal to any one who hints he is mentally hungry.

I can best illustrate from my own work. While I am ready to jump at the first call for help, ordinarily for five months I plod steadily through a district until I have visited every man, woman and child that owns as much as one colony of bees. My business is to make the bees productive. I am armed with all kinds of authority, such as would arouse the ire of the average American if they were even mentioned; but I never show the club. Generally speaking, I am as "welcome as the flowers in May," but once in a while I bump into a man who would probably be willing to scrap on that particular day with even Dr. Miller. He is busy, the bees are all right; if examined they would annoy everybody, and, besides, they would be hindered at their work. Furthermore, he hates all kinds of inspectors, and as for the Government, well, he won't say what he thinks. Such men are delightfully easy.

The very worst I ever came across had sworn by all the gods there are and some more, that he would "fire over the fence" the first Government man that ever set foot on his premises, and I was the unfortunate one. So interested were the neighbors in the expected fracas, that they all watched from afar as I set foot on the sacred ground. They were terribly disappointed when I stayed two hours, even more when I was accompanied to the gate by the farmer, who was protesting earnestly that I ought to give him more time.

With such a case the best policy is to spar for time. Just assure him that everything will be exactly as he wants it. There is no disease in the locality therefore there is no need to examine his bees. Crack a joke or two, tell a few funny stories, ask about the kind of honey he gets, and such like. Then meekly ask to be permitted to outline the best way to handle bees to avoid swarms. The most obstinate case will permit that much, even for no other reason than to give you a chance to earn your pay. Before you have well started, he interrupts by asking about the one hive that has something wrong about it, and wants to know what is the matter. Well, that depends upon so many things you could not express an opinion unless you really examined it, etc., and the next thing you know you are along the hives and are busy.

Meeting every beekeeper as I do, I have come to learn how little the average man knows about apiculture. It is just as well to be plain, he knows nothing about bees, and has made no effort to learn anything. The bees take care of themselves, yet he wonders why he gets no honey. About two beekeepers in a hundred, in my territory, know anything about bees, all the others save swarms after a fashion, and that is the limit of their acquirements. And I suspect that they are not very different from the average keeper of bees in most parts of the world. In British Columbia an honest effort is being made to educate them. In a later article I hope to show whether or not the effort pays.

When I started out as an inspector, my mind was chiefly concerned with bees and their ways, but I soon learned that the beekeeper and his ways were far more important; in the beginning at least. So I am steadily trying to understand men, and the system I am working out in my territory is based on the man more than on the bee. Later when I describe it I will not be a bit surprised if our leading authorities knock big holes in it from their standpoint, but I will have one good comeback, it works fairly well in British Columbia.

I often wonder, as I read the instructions given by other inspectors for the cure of foul brood, what will the farmer do? Will he follow directions to the letter? If I know anything, he will not. And there you have the chief reason why I decided for myself, and recommended to my official head that all undoubted cases of foul brood in our province should be destroyed. The case of Belgium is worthy of consideration, for so far as I have seen, it is the only country that is able to report the perfect elimination of the disease within its bounds, and this desirable end was attained by fire.

A problem consists in trying to do a thing in an "undoable" way. The great merit of the Belgian plan lies in this, it worked.

Victoria, B. C.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Cement Supers—Cotton as a Honey Plant

1. Do you think it would be all right to make supers out of cement? Would it agree with the bees? I can make them much cheaper with lumber. If any of the subscribers of the American Bee Journal have cement hives in any way, I would be pleased to hear (through the colums of the Journal) what their success has been.

2. They are raising a large amount of cotton near Phoenix. Do any of the readers know if cotton here in Arizona yields much honey? ARIZONA.

ANSWERS.—1. My guess would be that cement supers would be quite objectionable on account of their weight. It is also possible that with 115 degrees in the shade they might be too hot.

2 Cotton is a good honey plant in the southern States, and likely also with you. Yet sometimes it happens that a plant yields honey in one section and not in another.

If any readers can give more definite answers to either of these questions they can have the floor.

Old Combs in Decoy Hives

In the decoy hives will strips of foundation in the frames do as well as frames of comb?

Will the bees take to the foundation as readily? RHODE ISLAND.

ANSWER.—No; old combs are away ahead of foundation; indeed, I suspect an entirely empty hive is nearly as good as foundation.

Combined Section and Extracting Super

I would like to be able to make one super do for producing comb and extracted honey. That is to say if I wanted extracted to put in shallow frames, or if comb to put sections in the same box. Kindly tell me in the American Bee Journal the best arrangement you would suggest as to size and make of frames and sections (other than the hanging section frame). My hives are 8-frame Langstroth. SCOTLAND.

ANSWER.—I don't know from experience, but here is something that might answer: Take one of the section supers in more or less common use which have frames with close-fitting end-bars and no top-bars. Then for extracting combs you could make the same kind of frames, only with top-bars to them.

Ventilation in Winter—Painting Alighting-Boards—Shade

1. I have my bees in large boxes, with chaff on top, all sides, and ends and front. About 3½ inches above the entrance I have no chaff packing. How large a space should I leave for ventilation? I have the ⅜-inch side of bottom up.

2. The alighting-board on the front is painted two coats, and I notice when the bees leave it and come out on the bottom of the box they have a hard time to climb up, as the paint is so smooth when cold. I wonder if they have this same trouble in summer; if so, had it better not be painted?

3. Do hives need any shade where full-sized bodies for supers are used?

4. In hot weather how would it do to have the hives on the north side of a building facing north? This is the only location I have. IOWA.

ANSWERS.—1. Likely there will be none too much ventilation for a strong colony, with the entrance open the whole width, for with only ⅜ inch under bottom-bars, the chance for ventilation is not the best. But why in the world do you have the shallow space in winter?

2. It is not likely to make trouble in hot weather; but it is easy to rub the smooth surface with coarse sandpaper. You could also give a light coat of paint, and sand it lightly while the paint is still wet.

3. The shade is better, if only for the comfort of the beekeeper.

4. They will do very well there.

Hives and Covers—Marketing Honey

1. For a beginner which would you recommend, the 8-frame Jumbo brood-chamber or the 10-frame Langstroth?

2. What do you think of using, a 10-frame gable-hive cover or 8-frame hives? I find the rain beats in at the edges of the 8-frame covers, so I thought the extra width of the 10-frame cover would prevent this. I don't think much of the ordinary gable covers, as they leak too much.

3. What kind of a cover do you use?

4. Would you advise deep or shallow covers?

5. Which would you recommend, the 8 or 10 frame, full or shallow super for the production of extracted honey?

6. I know of no up-to-date beekeepers in this county, so all the honey produced here is sold for only 8 or 10 cents per pound, and put up "just any old way" with crushed bees and pollen in it, so when nice honey is offered for sale here it must be sold at less than half what it is worth. Would you advise shipping it to larger markets?

7. How would you winter bees out-of-doors? MISSOURI.

ANSWERS.—1. The 10-frame Langstroth.

2. I don't know, but I am afraid it would not be the most satisfactory.

3. A flat cover with a dead air-space covered with zinc or tin. The upper and the lower parts are each of ⅜-inch stuff, with the grain running in opposite directions, separated by strips or cleats ⅜ thick.

4. For my own use I prefer the flat cover (I have no trouble with rain beating in), although some good beekeepers prefer deep covers.

5. Ten-frame hives, or larger, for brood-chamber, and I think I should prefer shallow extracting combs.

6. Take the plan that will bring you the most, but unless your home market is overstocked, you may find it best to persist in furnishing for it the best quality of honey, and educating your customers up to it.

7. In your locality 2 or 3 inches protection at sides and ends, with 4 or 5 inches on top ought to work well.

Transferring from Old Boxes

A rancher captured nine swarms of bees at different times that had settled near his house. He boxed them into apple boxes, nailed the lids solid, after putting in a few frames and cutting a small opening in front. He scattered them about the ranch, putting the boxes on bare ground, and never tried to look at them. Some of them have been boxed up for over two years.

The boxes became loose, the bottoms were completely rotted off, and cracks opened up everywhere, and the rain came in through the cracks on top. I bought all of them, and had much trouble in moving them, as the boxes were so rotten that nails would not hold. I had to tie bottom-boards on and cover them up with sacks. The boxes are very heavy; there must be much honey in them; the bees are black.

If you will answer the following you will greatly oblige one of your subscribers and a beginner:

1. Are the bees liable to be healthy?

2. When will be the best time to transfer them into proper hives?

3. Must the hives have frames in them (with full sheets of foundation before I put the bees in, or should the hives be empty, and put in the frames after the bees are in?

4. Must I put the honey into the hives with them, *and how?*

5. If I put the honey into a regular feeding receptacle, will they put the honey into new sheets of foundation?

6. How many frames should I put in each 10-frame hive? CALIFORNIA.

ANSWERS.—1. They are likely to be just as healthy in those old rickety boxes as in the best hives. Of course, if foul brood is in the neighborhood they are likely to have it.

2. During fruit bloom is a good time, although in late years it is generally preferred to wait until 20 days after swarming.

3. If bees are transferred in fruit-bloom, the straight combs of brood are generally fastened in frames with strings or otherwise, and then frames filled with foundation are put in to fill up the hive, at the same time or before the bees are put in. If the transfer is made 21 days after swarming, then the hive will be entirely filled with frames of foundation before the bees are put in.

4. If you choose, you can fasten combs of honey in frames the same as brood, although it is not so satisfactory.

5. Yes.

6. The whole ten.

Transferring—Clipping Queens' Wings

1. I have a colony of bees in a cracker box without frames in it, and they have it nearly filled with combs. I would like to transfer them to a new modern 10-frame hive next spring. Would the following plan be all right: Put full sheets of brood foundation in the 10 frames, set box of bees on top, close all openings above, and make them work through the new hive below. Would they move down of their own accord, or will I have to drive them down?

2. Please explain the meaning of the word nucleus.

3. What is the advantage of clipping the queens' wings?

4. Could you start a colony with one pound of bees and a queen?

5. Does a queen-bee sting?

6. What is the average life of a queen, drone, and worker bee?

NEW SUBSCRIBER.

ANSWERS.—1. They will work down of their own accord, but not "while you wait" unless you wait until the old hive is pretty well filled with honey. It will help matters if, at the time you operate, you will cut away both box and combs up to where the brood is.

2. A nucleus is a baby colony. Just when a nucleus becomes large enough to be called a colony it is not easy to say; perhaps I might say it should be called a colony when

it has more than three combs covered with bees. This in summer-time; in the spring plenty of colonies have only two or three combs covered with bees.

3. The advantage is that a prime swarm with a clipped queen will return to its hive because the queen cannot go with it.

4. Yes; if started early enough in a good season it will make a good colony.

5. Yes, she will sting another queen, and in very, very rare cases a worker.

6. A queen, perhaps 2 years; a worker 6 weeks in the working season; a drone until the workers drive it out.

Questions from Japan

1. In some parts of Hokkaidow enormous lily flowers are found, and I can not speak too highly of their beauty and perfume—flowers are used to make perfumed water. I wish to know if bees work on them.

2. How many colonies do you have in your home apiary? How many acres about your apiary do all the colonies work? JAPAN.

ANSWERS.—1. I don't know; but you can tell by watching. I think they are likely to yield nectar.

2. The season closed with 101 colonies. I have only the one apiary now. It is hard to say how much ground they work on; perhaps all within 1½ miles. Within that range will be found fields of one to 20 acres of clover, and also much ground yielding little or nothing.

Bee Houses—Good Location

1. I propose to build a bee house in the spring of 1914, for protection against too hot summers and the cold months of winter. Our summers are not long, but sometimes very hot; the winters short and not very cold, occasionally in winter the thermometer will fall as low as 15 degrees above zero. Kindly give your advice on this question, also the advantage or disadvantage.

2. Name the different kinds of vegetables that bees gather nectar from to convert into honey. There are thousands of acres of vegetables and cotton planted in this section that is within a radius of 5 miles of the city.

3. From the brief description here given, what do you think of the locality? There are no bees within a distance of 7 miles of where I propose to locate. SOUTH CAROLINA.

ANSWERS.—1. Bee houses, such as you contemplate, were more or less in use some years ago, but have been mostly abandoned. They have the advantage that when the bees are handled in summer they will not sting so much as outdoors, and they are safer from thieves. But it is hot and inconvenient for the beekeeper, and bees do not generally winter so well in them. In spite of the fact that one does not generally relish advice against one's own inventions I advise you to let bee houses alone.

2. Likely the flowers of almost any vegetable are utilized by the bees when present in quantity. Among those that have been known as good honey-plants are peas, beans, onions, pumpkins, squashes, cucumbers, and other vines, radishes, etc.

3. My guess would be that the location ought to be excellent, as cotton alone is important.

Extra Bees for Nuclei

1. When buying nuclei is it best to buy an extra pound of worker bees to each frame, so as not to keep the queen from laying, and would it not make the colony build up quicker?

2. What is best for a large colony a 1-story hive or 1½ or 2 story?

3. Is the dovetailed hive a good hive? NEW HAMPSHIRE.

ANSWERS.—1. Yes, the stronger a nucleus the more rapidly it will build up, and if you can have an extra pound of bees added at a moderate cost it might pay well. Generally, however, if a stronger nucleus is wanted both combs and bees are added.

2. A single story is generally all that a strong colony needs to start with in spring. Then it depends upon size of hive (8-frame, 10-frame, or more) whether it may need another story before harvest. When the harvest comes, then the first story is enough for the brood-chamber, and additional room must be given for surplus. If for extracted honey, some use stories the same as brood-chamber, and some use shallower stories. For section honey, shallow supers taking only a single tier of sections are generally used, and these may be tiered up 2, 3, to 6 or 7 high. Extracting stories are also tiered up in a good season.

3. It is the one in most general use, and generally considered the best.

A Room for Colonies—Carniolans and Caucasians

1. Is it possible to keep several colonies of bees in a building, using a window as a common entrance for all?

2. Would you consider Carniolan or Caucasian bees superior to Italians in a fruit country, because of earlier breeding in the spring?

3. Do you consider a brood-chamber containing 10 Hoffman frames large enough at all times, first for Italians, second for Carniolans, or would a 12-frame brood-chamber be better? NEW YORK.

ANSWERS.—1. Yes, with proper precautions. The room must be light enough so bees can easily find their own hives after they are in the room, or else a tube for each hive must run from the entrance of the hive to the outside, and there must be no chance for a bee to get out of the tube into the room. In the first case (the light room) precaution must be taken against bees flying against the glass where they cannot get out. The window, or windows, must have an opening at bottom and top of *each* window.

2. I don't know, but I don't believe they would do any better than Italians.

3 There are times when a good queen of either kind would find 12 frames too few. Generally, however, either 10 or 12 will answer.

Which Hive to Use?

1. Which would be the best for me, the 8 or 10 frame hives? I do not want to let my bees swarm in the spring.

2. Which kind of hive do you think is the best, the dovetailed or Wisconsin? I have my bees out-of-doors all the year around. Some tell me I should have the Wisconsin because it has more of a front to shelter it from the rain. But I began with the dovetailed 8-frame hive. I ordered three new hives last spring. I shall order the Wisconsin after this if it is best for the weather. I see in the catalog the Hoffman brood-frames will fit both kinds.

3. Which is best for extracting, the full depth or the shallow supers?

4. Which do you think is the best wood for a hive, white pine or cypress?

5. Which kind of hive is best for comb honey? IOWA.

ANSWERS.—1. The larger hive will probably be better for you.

2. Doubtful if you will find any difference. A front that protects against rain also gives protection to spiders. But you will do well to have only one kind.

3. Except for the inconvenience they cannot be used interchangeably in the brood-chamber, the shallow frames are considered better for extracting. The queen is less likely to go up into them, and their shallowness makes them easier to uncap.

4. I have had no experience with cypress, but have an idea one is about as good as the other.

5. There is probably nothing better than the 10-frame dovetailed.

Supering

1. I read an article by Dr. Bonney in the November issue of the American Bee Journal about cutting out chunks of finished honey to fit sections and then putting them on the hives for about 36 hours for the bees to fasten. This seems reasonable to me, what do you say about it?

2. In the December Bee Journal I note that you had some colonies this season with as many as seven supers on them. Were these supers added one at a time to the top, or were the top supers lifted off each time and the new super put next to the bottom?

3. If all seven of the supers had been put on at once, would you have had as much honey, and would the sections have been as well filled?

4. When you have so many supers on a hive for any length of time, will not the first filled sections become darkened from travel stains by the bees?

5. If you should put two or three supers on at once at the beginning of a big flow, would the bees begin storing in the top or bottom super first?

6. If you would run a colony for both extracted and section honey, which super would you put next to the brood, the section super or the extracting super? KENTUCKY.

ANSWERS.—1. You never can be sure about a thing of that kind until it has been thor-

MR. S. BEEBE IN HIS SMALL APIARY AT BEEBE PLAIN, VT.

oughly tried out by the bees. It is possible that it might be advantageous for those who have difficulty in getting bees to work promptly in sections. I don't have any difficulty of that kind, so I can hardly believe I would gain by it.

2. There was no cast-iron rule about it, but generally it was like this: When the first super was well started, perhaps half filled, or well crowded with bees, a second super was put under it, and generally an empty super on top of all. After that, whenever the bottom super was about half filled the top super was put at bottom and an empty super put on top of all.

3. Like enough the result last season would have been about the same, because of the continuously long season, but how could I tell in advance whether the season would close in three days or three months?

4. No, because none is left on long enough to be darkened; moreover, each super is raised higher before the sealing, and sections are darkened after the sealing, and when sections are high enough from the brood-chamber they are darkened very slowly, if at all.

5. I would expect them to begin on the lower super.

6. Those who use the two kinds of supers put the extracting super on first. But I wouldn't think of doing a thing of that kind unless I preferred to have the extracted honey.

Sour Honey

1. How far from the public highway does the law require an apiary to be to insure one from all damages?

2. Will honey extracted from comb freshly built and not capped over sour if placed in a can? If so, how would you prevent this?

3. Will comb and extracted honey put in regular honey buckets sour if kept any length of time? INDIANA.

ANSWERS.—1. That depends altogether upon the the local or State laws. Generally I think there is no law about it, but if you are wise you will not risk having your bees close enough to the highway to endanger any one passing by. If your bees are very gentle it may be safe to have them close to the roadside. Some bees are not safe 10 rods away.

2. Maybe, and maybe not. Sometimes honey is sealed before it is ripened, but generally not. The remedy is to wait until the honey is sealed before extracting. Even if it never soured, it will be money in your pocket in the long run if you never put anything on the market but the very best ripened article.

3. Either kind may be kept for years without souring if well ripened by the bees, and then kept in a dry place where it will not attract moisture. Keep it in a place where salt will keep dry. If salt gets moist in a certain place, so will honey unless it be extracted honey tightly sealed.

REPORTS AND EXPERIENCES

This Ohio Report Shows Up Well

We had a very good year with the bees. We started the season with 12 colonies, increased them to 26, and only had 4 swarms. We bought 18 colonies, and caught one stray swarm. We secured 1700 pounds of honey, 1000 pounds of comb and 700 pounds of extracted. We have now 35 colonies, with plenty of stores for winter.
EDWARD BLACKSTONE.
Cumberland, Ohio, Nov. 17.

An Excellent Crop

I began the season of 1913 with 14 colonies, increased to 20 by natural swarming, and got 2723 pounds of extracted honey. My bees are in a good healthy condition for winter.
FRED BECHLY.
Searsboro, Iowa, Nov. 17.

430 Pounds from 2 Colonies

I work on the railroad and have only mornings and evenings to attend to my bees. I had 2 colonies in the spring, and they gave me no increase. I took 430 pounds of honey, 200 in sections, and 230 in brood-frames. How did I manipulate my bees? Just watched them work and gave plenty of super room; that is all I had time to do.

I sell my honey at home, and have no trouble in getting 15 cents per pound. I could sell a lot more if I had it. I keep in touch with the American Bee Journal and get honey money; keep your money and get little honey.
H. C. SPRINGER.
McCallsburg, Iowa.

Removing Bees from a House

I have been having some experiences with our bees this fall that have been rather interesting to me, and I thought possibly it might be new to at least some of the readers of the "Old Reliable." In October a friend of ours in Lee county asked me to take two swarms of bees from the north side of his house, as he wished to put on new siding, and was afraid of the bees. He told me I might have the bees if I would take them out.

We first built a scaffold up under where the bees were and proceeded to tear the old weather-boarding off. I succeeded in getting the bees nearly all out of the house after transferring quite a little brood and some empty combs into an empty hive. There was about 100 pounds of honey we gave to the owner, and we put 25 pounds in an empty super for the bees. I am not sure whether the old queen remained outside with a few bees or not. Anyway, these few bees left a good swarm and queen in the hive. The swarm was gathering pollen yesterday.

The other swarm was nearer the ground, and was taken out quite easily. The queen remained outside with a small cluster of bees for several days, and finally when I found her I introduced her to the main part of the swarm by the smoke method. The colony is doing well. I now have 15 colonies of my own and three on shares. I never knew bees to gather pollen from dandelion as ours are doing this month. My bees are in excellent shape for winter. J. W. STINE.
Salem, Iowa, Nov. 20.

Winters Successfully Out-of-Doors

I have had a very good year with my bees. I had 40 colonies, spring count, and increased to 88. I have taken 4300 pounds of honey, 2600 pounds of comb and 1700 pounds of extracted, and of the very finest quality, and I have it nearly all closed out at good prices. I doubled some of my colonies, and put them into winter quarters in good condition. I reduced them to 80 colonies. I winter them in the apiary.

I build a close fence about 30 inches high, and place the bees in front of this fence on hive stands facing the east. I leave a 4-inch space between the fence and the back of the hives, and about 3 inches between hives. I shelter the front of the hives with 10-inch boards over the entrance, and on these boards I place on edge 8-inch boards. I then pack all this space about the hives with dry leaves. I leave one empty super on each hive, and lay crosswise over the brood-chamber two or three corncobs to make a passage-way for bees over the frames. I then spread a burlap cloth over these and fill the super with oat chaff, then put on the hive cover, completely cover all with leaves, and roof of prepared roofing.

I have been very successful in wintering bees in this way. B. A. MANLEY.
Milo, Iowa, Dec. 1.

The Influence of the Bee Journal

I only had 23 colonies, spring count, and I averaged 200 pounds of honey per colony, one-third extracted and two-thirds comb, but the bees had to draw all the foundation out. Attached are two pictures of my api-

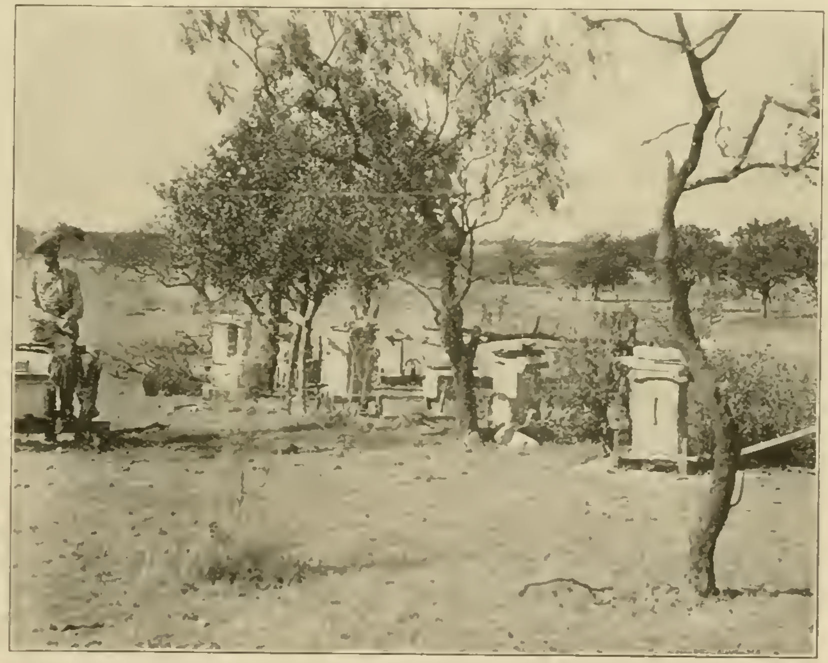


FIG. 1.—"Bee Gums," likewise breeding places for disease. Limited capital and energy will transform these boxes into honey yielding hives.

Fig, 2, Mr. W. L. Tharp, of Melvin, tex.
The same colonies after transferring. They now furnish an income to their owner.

ary; one was taken 5 years ago when I first began to read the American Bee Journal and bee books, and the other one shows it at the present time, only there are not many hives to be seen, as I have them in different places. W. L. Tharp.
Melvin, Tex., Nov. 25.

Average Crop in Washington

There was an average crop of honey produced the past season, and the greater part of it is out of the hands of the producers at the present time. Prices ranged from 7 to 9 cents to the producer, Our Honey Producers' Association is selling direct to the retail trade at 8⅓ cents in 5-gallon cans, and 10 and 11 cents in 10 and 5 pound pails respectively. A. E. Burdick.
Sunnyside, Wash.

Dry but Favorable Season in Kansas

Our bees are now ready for the winter, and I find them in extra good condition, with plenty of sealed honey and strong in bees. Our honey crop is quite satisfactory in spite of the great drouth we had here in Kansas. The white clover was never better until the drouth set in. We never secured a better quality of clover honey than this year. There were not many swarms; but it is surprising to find the bees so well supplied for the winter.

The articles of the Editor's travels in Europe are very interesting, especially for those who know something of that well civilized country. Max Zahner, Sr.
Lenexa. Kan., Nov. 20.

The Cause of Sweet Clover Advancing

I have had extra good luck this dry season. I only had 4 colonies to start with last spring. I now have 16; 2 were natural swarms, made 2 artificially, and caught 8 more, so you see my luck was good. As I carry mail on a Rural Route, I have a good chance to find swarms hanging on the hedge or on some tree along the road. I got 1000 pounds of fine comb and extracted honey.

I sent to Texas for 2 Caucasian queens. Both colonies have a nice lot of fine bees for winter. The first one did well in gathering honey, and I am well pleased. I think Caucasians are the coming bees. They seemed to get out when it was colder, and on Nov. 14 they were carrying in pollen from dandelions.

I see that nearly everybody has "gone wild" over sweet clover. Now I am happy, for I have been abused about sweet clover for the last 20 years. I have preached to the "heathens" about its value until I got disgusted. It takes a long time to get some people's eyes open. They always have to wait until some one else tries it. I know a man who said that he would sow some if he had the seed, but he didn't want people to find it out for fear they would make fun of him. Now he is going to sow a lot of it on his ragweed pasture, as he thinks it will fertilize better than ragweed. A. N. Cooke.
Woodhull, Ill., Dec. 4.

Heat Required for Best Results With Comb Honey

In regard to ventilation for sections as explained in the August number, "Beekeeping for Women," written by Miss Emma M. Wilson, I must say that if we ventilated our comb-honey supers we would have all short-weight sections. The cause of the bees finishing the outside of the super before the inside, is the heat which is just what we want, to produce good comb honey. We want the bees to be warm enough to work evenly all over the super, which they will not do if they are ventilated so much that they have to cluster to keep warm during the night.

We pick out our strongest colonies for comb-honey builders, and don't allow them any more ventilation than a ⅜-inch entrance will give them, and we get better results in the supers than when we ventilate. Of course we get a few more swarms, but we consider the advantage gained in the supers is worth more than the disadvantage of a few more swarms. Bell Bros.
Brook Park, Minn., Nov. 17.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Queens, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

For Sale—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

Phelps' Queens are hustlers.

Bees and Queens from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

Golden and 3-Banded Italians, also Carniolan Queens Tested, $1.00; untested, 75c each. Write for prices of bees per pound and nuclei. C. B. Bankston,
tf Box 65, Buffalo, Leon Co., Tex.

Phelps' Queens will please you.

California's Italian Hustlers equal the best. Everybody is getting them. This season only. Tested $1 25 to $2.50.
Mated—1, 75c; 12, $8.00; 50, $32 00; 100, $60 00.
W. A. Barstow & Co., San Jose, Calif.

Queens bred from Moore's and Doolittle's best Italian stock. Untested, 75c each; $8.00 per dozen; $60 per 100. Tested, $1.00 each; $10.50 per dozen; $80 per 100. Delivery guaranteed. Book orders now.
Spencer Apiaries Co, Nordhoff, Calif.

The Rush for Phelps' queens has been so great that we will be unable to take care of any more orders this year. We have some of the finest breeders for next year that you ever saw. Give us your orders early. C. W. Phelps & Son,
Binghamton, N. Y.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00: Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

We Requeen our bees every year to prevent swarming. We offer the one-year old queens removed from these hives at 50c each; $5.40 per doz.; $40 per 100, Italian stock. Delivery guaranteed. Book orders now.
Spencer Apiaries Co., Nordhoff, Calif.

Three-Banded and Golden Italian queens. Ready March 1. They have been bred for three points, prolificness, gentleness and honey-gathering qualities. Prices, Select Untested, 75c each; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60. Tested, $1.50; Select Tested, $2.00.
Garden City Apiary Co.,
R. R. 3, Box 86, San Jose, Calif.

HONEY AND BEESWAX

Comb and Extracted Honey for sale.
Ioseph M. Elsbree, Waverly, N Y.

"Null's Famous Melilotus Honey." Sample for stamp. Null Co., Demopolis, Ala

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale—Well ripened buckwheat extracted honey in 60-lb. cans and 5-lb. pails. Sample 10c, which may apply on order.
M. C. Silsbee, R. D. 3, Cohocton, N. Y.

Honey for Sale—40 cases (two 60-lb. cans each). A blend of white and sweet clover, the most part; and clovers and fall flowers, a very light amber of good quality, 9 and 8½c in large lots; less than five cases, 9 and 8½c.
Alfred Mottaz, Utica, Ill.

$1000 (one thousand). I will pay the above amount in cash for one pound of honey that is equal to my *Red Ripe* (Harnessed Sunbeams) Honey in digestibility, nutrient, value or flavor. Samples and prices free.
C. W. Dayton, Owensmouth, Calif.

For Sale—No. 1 white clover comb, $3.50 per case; No. 2, $3.00 per case. No. 1 fall comb, $3.00 per case; No. 2 fall, $2 50 per case. All cases have 24 sections, and 6 cases to carrier. Quirin-the-Queen-Breeder,
Bellevue, Ohio.

Dealers and producers who buy honey kindly ask for a late number of the Review giving a list of members having honey for sale. Many carloads are listed in the October number. Address, 9Atf
The Bee-Keepers' Review, Northstar, Mich.

EXTRACTED HONEY — Best pure Illinois. White Clover and blends with Sweet Clover. Amber Fall and Spanish-needle grades. Also fine Western Water-white and Light Amber Alfalfa. All packed in 5, 10 and 60 lb. cans. Some in barrels. Samples and prices Free. Dadant & Sons, Hamilton, Ill.

FOR SALE

RUFUS-RED BELGIAN HARES. Price list free. Harvey L. Stumb, Quakertown, Pa.

I GOT 100 pounds of comb honey per colony; my neighbors got none. I'll tell you how for 25c. O. N. Baldwin, Baxter, Kan.

BETTER HIVES FOR LESS MONEY—Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

FOR SALE—20 Horse Power I. H. C. Delivery Truck; good as new. In fine condition and running order. Will be sold at a bargain.
1A3t L. Werner, Edwardsville, Ill.

REPRINT of Old Original Langstroth work has just been printed, and will be mailed on receipt of $1.00. See full page advertisement in this issue.

FOR SALE—Empty second-hand cans, two cans to the case; good as new; 25c per case.
C. H. W. Weber,
2146 Central Ave., Cincinnati, Ohio.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They re nice and cheap. White Mfg. Co.,
3Atf Greenville, Tex.

FOR SALE—Root's goods and Dadant's foundation at factory prices f. o b. Pacific Coast points in quantity lots; smaller lots in proportion. Write us stating your wants.
Spencer Apiaries Co., Nordhoff, Calif.

HONEY AS A HEALTH FOOD is a 16-page booklet giving uses of honey in recipes and as a medicine. Just the thing to create a local demand for your honey. We print your business card on all orders for 100 or more. Prices as follows, postpaid: 50 copies 90c, 100 for $1.50, 250 for $3.00, 500 for $5.00, 1000 for $9.00. American Bee Journal,
Hamilton, Ill.

POULTRY

FOR SALE — Buff Orpington eggs, pure bloods: $1.00 for 15. Satisfaction guaranteed.
2A1y W. H. Payne, Hamilton, Illinois.

HONEY LABELS

THE NUMBER of enquiries coming in for honey labels has been so large that we have decided to put in a stock of these for the convenience of our readers. Should you be in need of anything in this line, send for a copy of our label catalog, which will be sent free. American Bee Journal,
Hamilton, Ill.

SITUATIONS.

WANTED—Position for 1914, all-around bee man; 25 years' experience. Best of reference. Will go any place. Prefer California or West. L. W. Benson, Nampa, Idaho.

Dr. Peiro will continue to give the readers of the American Bee Journal free advice regarding the subject of SURGICAL and MEDICAL treatment. Many have availed themselves of this offer. Return postage is all you need to send. Address, DR. PEIRO, 4536 Perry Street, Chicago, Ill.

HONEY AND BEESWAX

CHICAGO, Dec. 16.—Prices on comb honey average about one cent per pound less than at this time in November. Just how much remains to be marketed is unknown, the probability is that sufficient quantities remain unsold to keep the markets well supplied. The extracted is not so firmly held, but prices have not receded much, especially is this true of well ripened white clover or basswood in new cans, which brings 8@9c per pound. Beeswax sells at 31@33c, according to color and cleanliness upon arrival. R. A. BURNETT & CO.

KANSAS CITY, MO., Dec. 13.—The honey market shows rather a weak feeling. The receipts of comb are large. The supply of extracted is not large; demand just fair. The weather is warm, and this partially accounts for the light demand. We quote as follows: No. 1 white comb, 24 sections per case, $2.75; No. 2, $2.50. No. 1 amber, $2.60 to $2.75; No. 2, $2.50. White extracted, per pound, 8@8½c; amber, 7@8c. No. 1 beeswax, per pound, 30c; No. 2, 25c.
C. C. CLEMONS PRODUCE COMPANY.

INDIANAPOLIS, Dec. 18.—Honey is moving freely. Fancy white comb is selling at 16@17c; No. 1 white, one cent less Finest extracted, 9@10c in 5-gallon cans. Beeswax is in good demand, and producers are being paid 32c, cash or trade.
WALTER S. POUDER.

NEW YORK, Dec. 18.—The demand for comb honey has slackened off to some extent of late, and while there is a call for white honey, fancy in particular, lower grades, mixed and buckwheat are practically at a stand still. Our stocks, however, are not large, and will be disposed of in the course of time. We quote fancy white at 16c, No. 1 at 14@15c; No. 2, white, at 12@13; buckwheat and mixed at 10@11c. The market on extracted honey is quiet also, and while the stock of domestic grades is not very large, the new crop from the West Indies is arriving in large quantities, and prices have been gradually declining. We quote white clover at 8½@9c, light amber at 7½@8c, buckwheat at 7@7½c. West Indies at 60@65c per gallon, according to quality. Buckwheat steady at 32@33c.
HILDRETH & SEGELKEN.

DENVER, Dec. 10.—Our local market is well supplied with honey, and our jobbing quotations are as follows: Strictly No. 1 white, per case of 24 sections, $2.70; choice, $2.57, No. 2, $2.43. Extracted, white, 8@9c; light amber, 7@7½c. We are in the market for beeswax, and pay 30c per pound in cash, and 32c in trade delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, *Mgr.*

LOS ANGELES, Dec. 10.—The market on California honey has been inactive recently, on account of the failure of the sage honey crop and the scarcity of other fancy varieties in this State. We think accounted for by the fact that there has been plenty of other kinds of honey produced both in the western States and in the East. There is a car of fancy white orange honey still to be had at 9¼@9½c, f. o. b. Los Angeles, and there are a few cars of alfalfa light amber honey which could be sold at about 6c per pound f. o. b. shipping point; also one car, possibly two, of fancy light amber mountain honey at about 7c. Outside of this small quantity the honey business in the extreme West depends upon the sweet clover and white alfalfa honey produced in the States lying just east of California. This is held now at 6¾@7c f. o b. shipping point.

There has been a lively demand for beeswax at prices higher than usual, and on this account the producers have sold rather freely. Eastern buyers are bidding 39c per pound and upwards f. o. b. California.
HAMILTON & MENDERSON.

CINCINNATI, Dec. 18. — The demand for honey at this time of the year is good considering the large quantity on the market. It does seem that this year there is no end of shipments coming in. Fancy clover comb honey is selling at 16c a pound, and white comb honey from $3.50 to $4.40 per case. Extracted honey is selling from 5½@7½c for amber, and from 7½@10c for white clover extracted honey, according to quality and quantity. We are paying 32c a pound delivered here for bright yellow beeswax.
THE FRED W. MUTH CO.

CINCINNATI, Dec. 19 — The market on honey is quiet with quiet a supply. No demand for off grades of comb honey. No. 1 white sells from $3.50 to $3.65. Light amber honey in cans from 8@9½c. White honey in cans 9 cents. Beeswax is selling at $35 per hundred.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

BOSTON, Dec. 19.—Fancy and No. 1 white comb, 16@17c per pound. New fancy white extracted in 5-gallon cans, 10@11c. Beeswax, 30c. Pure white honey in barrels, 9c per pound. BLAKE.-LEE COMPANY.

SAN FRANCISCO, Dec. 15.—The comb honey market is overstocked, and little or no demand at present, and prices have dropped accordingly. No. 1 fancy, 13@15c; No. 2, 10@12c; dark, 8@10c. Extracted, water-white, 9c; white, 7½@8c; amber, 6@7c; darker grades, 5@5½c. Beeswax, 30@32c per pound. Very little offered. JOHN C. FROHLIGER.

EXTRACTED HONEY

Just received car New Utah Alfalfa Honey, **9 cents** a pound f. o. b. Kansas City, Mo. **C. C. CLEMONS BEE-SUPPLY CO.**
137 Grand, Kansas City, Mo.

CREATE A LOCAL DEMAND FOR YOUR HONEY

By Sending Out Booklets, Giving Different Uses of Honey With Recipes, Etc.

HONEY AS A HEALTH FOOD

Is a 16-page pamphlet; envelope size; just the thing to create the local demand. The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last is devoted to "Honey Cooking Recipes," and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey as a food, the more they will buy.

Prices, prepaid: Sample copy for a 2-cent stamp; 50 copies for 90 cents; 100 copies for $1.50; 250 copies for $3.00; 500 copies for $5.00; or 1000 for $9.00. Your business card printed **free** at the bottom or front page on all orders for 100 or more copies. Address all orders to

AMERICAN BEE JOURNAL, HAMILTON, ILLINOIS

WANTED

Honey!

Extracted and Comb

Will buy or handle on Commission

Beeswax

Will Pay Highest Pricse.

Yours very truly,

HILDRETH & SEGELKEN
265-267 Greenwich St., New York, N. Y.

NEVER Such Poultry and Egg DEMAND

—before in poultry business. *Shortage* of beef, pork, mutton makes this poultrymen'a *bonanza* year. Combine chicken-raising with bee culture—double your income. Poultry profits *high*. But use *right tools* —get *full measure* success.

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World's Standard. Self-regulating, self-ventilating. Fireproof, insurable. Highest records for *big, continuous hatches*. Get Cyphers Company's 244 page catalog and poultry guide *before you buy*. Eight vitally helpful chapters. Address today

CYPHERS INCUBATOR CO.
Dept. 8 8 Buffalo, N. Y.

Write For Big Free Book

3-BAND LONG-TONGUED RED-CLOVER ITALIAN QUEENS

For Sale.—My long-tongued Goldens are proving themselves to be the bee to clean Foul Brood, This is why I have such a large trade in Canada. Mr. E. L. Cox, of Jesup, Iowa, introduced 50 of my 3-band queens in Foul-Broody colonies in 1912; and he said the disease was cleaned up where each of those queens was put. They gathered such a large crop of honey in 1912 that he bought 50 more in 1913.

One Untested, 75c; 6, $4.00; 12, $7.50; 25, $13.50; 50, $25.00

Double the above for tested queens. Bees by the pound: One lb., $2.00; 2 lbs., $4.00. One-frame nucleus, $2.00; 2 frame, $3.00; 3-frame, $4.00. To all the above packages add the price of queen. I will begin to send out queens in April.

Positively no checks will be accepted. Send money by P. O. Money Orders. All queens arriving dead will be replaced if cage is returned by return mail.

J. B. ALEXANDER, CATO, ARK,

Utah Beekeepers to Meet.—The annual meeting of the Utah Beekeepers' Association will be held on the Utah Agricultural Grounds on Jan. 30, 1914, under the special auspices of the extension department. Special rates will apply on all railroads in Utah. The program follows:

Jan. 30, 10 a.m.—Enrollment, Faculty Room, Call to Order, Room 126, President's Address—E. B. Hawkins, of American Fork.

Appointment of Committees, Report of Secretary—H. C. Henager, of Salt Lake.

11 a.m.—Rearing and Introducing Queens—R. T. Rheese, of Ogden.

Production and Sale of Honey—Wilford Belliston, of Nephi.

2 p.m.—Foul Brood Treatment—James Hacking, of Vernal.

Wintering—Summer Stand Cellar—N. E. Miller, of Logan.

Middle Man and Sale of Honey—A. G. Anderson, of Beaver.

8 p.m.—Music—School of Music, of U. A. C.

Life of the Honey Bee (lantern slides)—Dr. E. G. Titus, of U. A. C.

Reports of committees and election of officers.

An exhibit of bees and beekeeping appliances will be open to the beekeepers and other visiting farmers and housevives in the College Museum.

IMPORTANT MEETINGS FOR BEEKEEPERS.

Farmers' Round-Up and Housekeepers' Conference, Jan. 26 to Feb. 7. State Poultrymen's Convention, Jan. 29 to 31 State Poultry Show, Jan. 26 to 31. State Dry-Farmers' Convention, Jan 31, State Dairyman's Convention, Feb. 2.

◆

The Opfer Hive-Entrance Bee-Feeder.—In the spring we must feed the bees to have them strong for clover-bloom. With all the present feeders this is a troublesome job—either the hive-bottom or covers have to be taken off every time we feed. With the Entrance Feeder shown herewith, all you have to do is to push it in at the hive-entrance and leave it there until there is no more need of feeding. It contracts the entrance, and that is what you want in spring. The size of this feeder is 7x8 inches, and ¼ inch deep, and holds 5 ounces of feed. You can feed 100 colonies in about 25 minutes.

In case of foul brood you can feed medicated syrup, and your bees will build up strong and healthy, and be in good shape when clover starts, ready to shake on foundation.

I have used 75 of these feeders about 8 years, and today they are as good as ever. With proper care they will last a life-time.

In spring or in fall most bee-keepers neglect to stimulate brood-rearing—one of the most important things in having strong colonies and good wintering. It does not depend so much upon the amount of feed as it does upon regularity every night (unless the weather is too cold), and you will wonder where your strong colonies come from.

Some of the many good points of the Entrance Feeder are these:

1. It is made of heavy galvanized iron and will last a life-time.
2. It reduces the hive entrance.
3. It reaches where the bees can get at the feed even in cool weather.
4. It feeds the right amount.
5. It will not cause robbing.
6. It will not disturb the colony while feeding.
7. It permits quick work.
8 The bees will not drown in it.

I am in a position to furnish all demands for these feeders at the following prices, f. o. b. Chicago: One for 20c; 5 for 18c each; 10 for 16c each. If ordered by mail, add 10c each for packing and postage.

Address all orders to—**A. H. OPFER,
6259 Patterson Ave., Chicago, Ill.**

WHEN YOU WALK

Into your apiary you surely have some colonies that are

JUST A LITTLE BETTER THAN THE REST

IF THEY ARE OUR

Gray Caucasians

They are surely pets of high degree. Centle as doves. Always just so. Send or prices.

A. D. D. Wood, Box 61, Lansing, Mich.
or Box 82, Houston Heights, Tex.

BOOKS FOR BEE-KEEPERS

FOR SALE BY

AMERICAN BEE JOURNAL,
HAMILTON, ILLINOIS.

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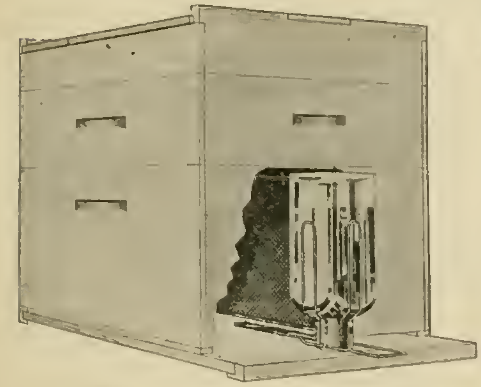

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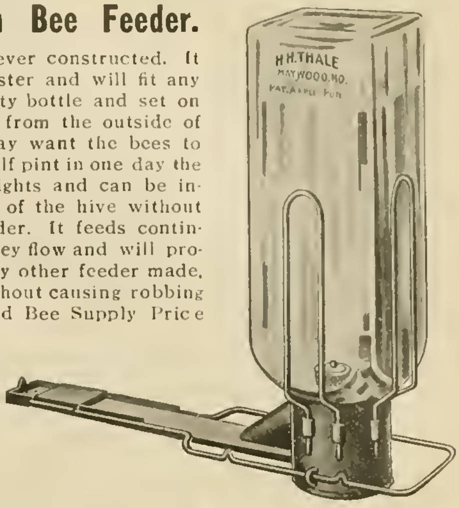

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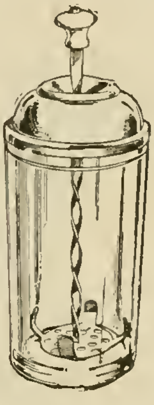

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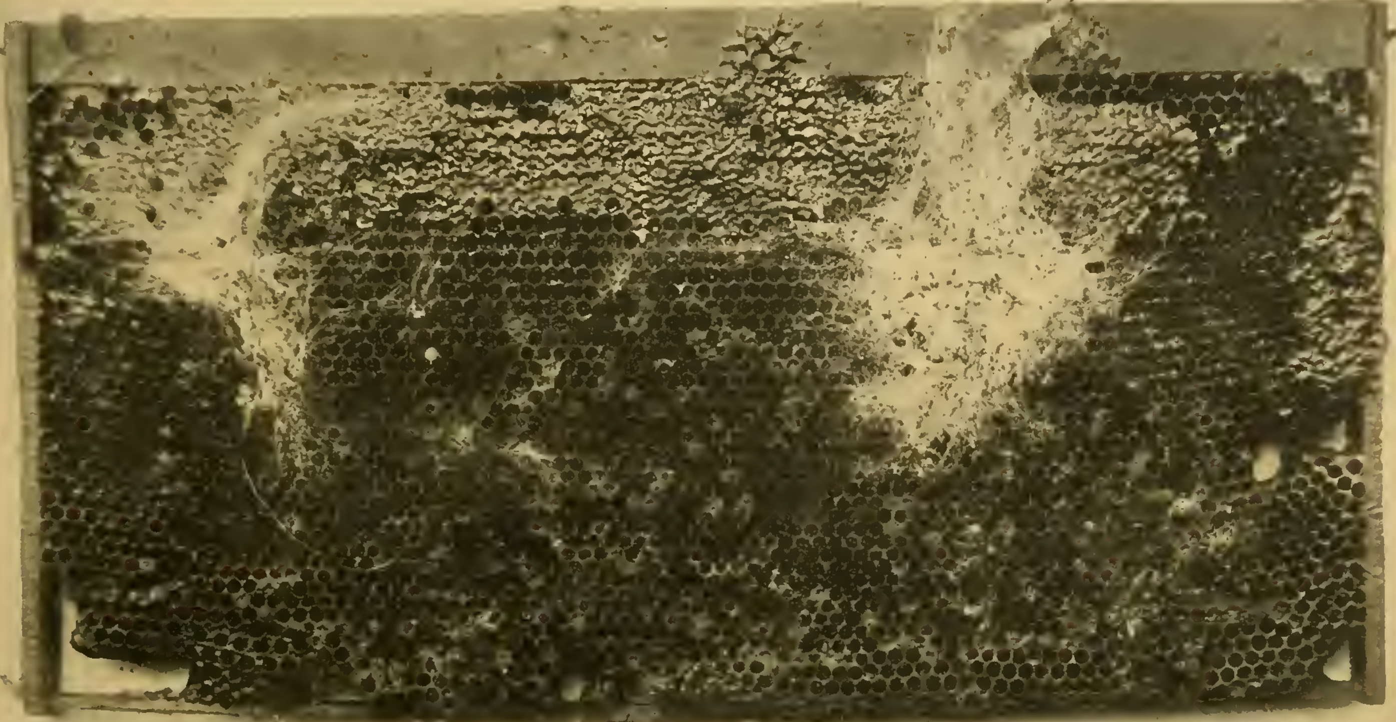

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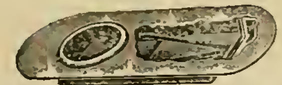

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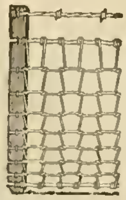

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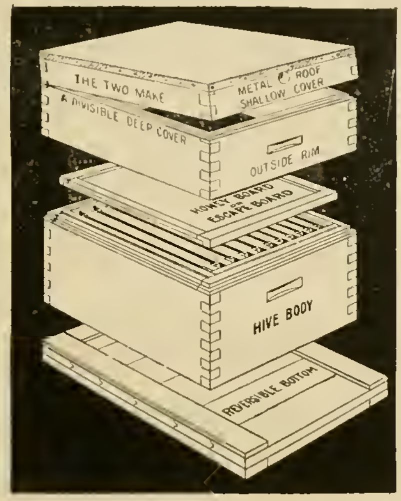

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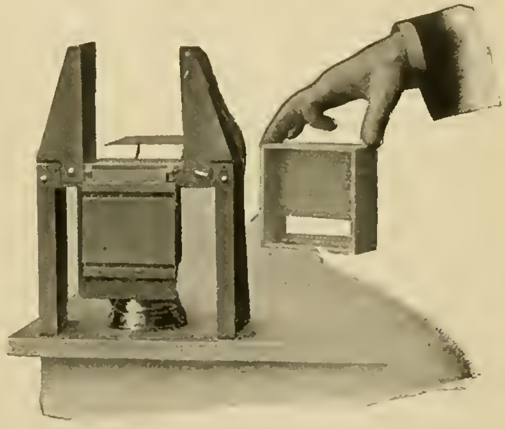

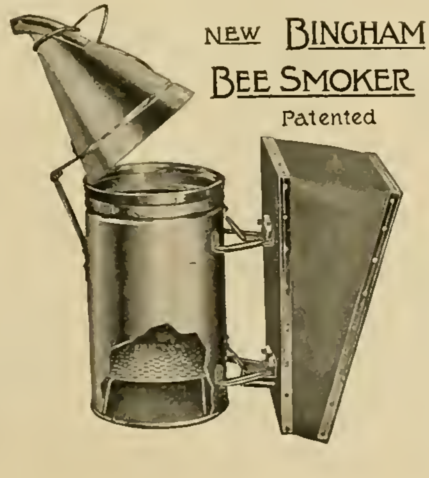

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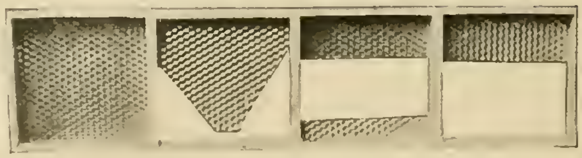

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"FALCON" QUALITY—In making our beehives, all of our waste lumber is made into cheap toy building-blocks, so that we are able to put better material in our hives and goods. Get a trial lot this fall so that you can see for yourself, and still have time to order 1914 supplies.

FREE SAMPLES of our famous "**Falcon**" foundation, made in our factory at Falconer, N. Y., cheerfully sent postpaid with copy of catalog, and name of nearest dealer if desired.

FACTORY W. T. FALCONER MFG. CO., - Falconer, N. Y., U. S. A
Where the good bee-hives come from

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Learn what Quality Hill Queens mean in greater honey-yields for you. Send a postal for the booklet, "A Story of Success." Then you'll know why we have been able to supply few more than our re-orders. Dozens of beekeepers buy only our queens. This is because we guarantee every Quality Hill Queen to have been reared under conditions to warrant your success. Goldens are our specialty, but we breed the darker strains, too. Only the highest yielders rear our drones, and the breeders are carefully tested. You have a right to know all about the queens you buy. Do you? Write the postal now. Make us prove our word.

Many beekeepers rear their own queens. Many hesitate to pay big prices for breeders. Our select tested Quality Hill Queens are for such. Always tried one month in full colonies after testing. Each must throw excellent daughters. All such are reduced in egg laying before shipment. They must make good. They are reared for you. The booklet tells about them. Write for it.

Reference—Any Plainfield business firm listed with Dun & Bradstreet.
5 percent discount on all dozen orders received before March 1.

Quality Hill Apiaries, Plainfield, Illinois

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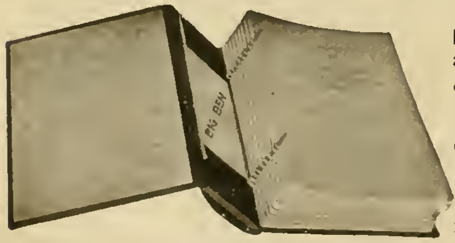
So that you can refer to them at any time



The cut illustrates the **Big Ben Binder**. It is made of heavy cloth and is arranged so that each number can be filed as received.

We have a quantity of these made especially for our readers, with the name **American Bee Journal** in gilt on the cover. Each Binder holds the issues for three years. When bound your Bee Journals will appear to be in genuine book form. The price of this Binder alone is $1.00. We club it together with a year's subscription to the AMERICAN BEE JOURNAL, both for $1.60.

American Bee Journal, Hamilton, Illinois

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Please mention Am. Bee Journal when writing.

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Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

BARNES' Foot-Power Machinery

Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free

Address, W. F. & JOHN BARNES
995 Ruby St., Rockford, Ill.

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority.

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL — Breeding. — Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

White Sweet Clover Seed

Sweet Clover is rapidly becoming one of the most useful things that can be grown on the farm. Its value as a honey-plant is well known to bee-keepers, but its worth as a forage-plant and also as an enricher of the soil is not so widely known. However, Sweet Clover is coming to the front very fast these days. Some years ago it was considered as a weed by those who knew no better. The former attitude of the enlightened farmer today is changing to a great respect for and appreciation of Sweet Clover, both as a food for stock and as a valuable fertilizer for poor and worn-out soils.

The seed should be sown either in the fall or early in the spring. 20 to 25 pounds per acre of unhulled seed is about the right quantity to sow. We can ship promptly at the following prices for the white variety:

Postpaid, one pound for 30 cents, or 2 pounds for 50 cents.
By express, f. o. b. Hamilton—5 pounds for 80c; 10 pounds for $1.50; 25 pounds for $3.75; 50 pounds for $7.00; or 100 pounds for $13.00.

Seed will be shipped on receipt of order

American Bee Journal,
Hamilton, Illinois.

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When you order Bee Goods, you want them "now"—we are in the very heart of the Bee Section—no city with so good package car service—largest stock west of the Mississippi. Whenever possible, orders shipped same day as received—more carefully packed than ordinary.

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FOR SALE
Fine Three-banded Southern
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Untested, $1.00, tested, $2.00. My best, $3.00. My bees are gentle, prolific, and fine hustlers. Give me a trial order and be convinced.

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Lewis Quality Which means that all Lewis Hives are made out of clear white pine, and Lewis Sections made out of fine white basswood. Material in these goods is the best obtainable, selected by experts.

Lewis Workmanship The Lewis Factory is equipped with the latest improved machinery, constantly watched by experts. The Lewis head mechanic has 36 years of bee-supply experience; the superintendent of bee-hive department, 30 years; the superintendent of sections, 29 years. These and many other skilled men have a hand in all the Lewis goods you buy.

Lewis Packing All Lewis Beeware is carefully and accurately packed—a patent woven wood-and-wire package made only by the Lewis Company is employed largely in packing; this makes the package light, compact and damage-proof.

Lewis Service Years ago all goods were shipped direct from the factory with attending high freight-rates and delays during the honey season; **now** Lewis Beeware can be obtained almost at your own door. Over 30 Distributing Houses carrying Lewis Beeware by the carload, are dotted all over the United States and foreign countries. Write for the name of the one nearest you.

Our New Catalog for 1914 is Now Out. Send for One

G. B. Lewis Company,

Manufacturers of Beeware,

Watertown, - - - Wisconsin

AMERICAN BEE JOURNAL

Entered as second-class matter at the Post office at Hamilton, Ill., under Act of March 3, 1879

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR C. C. MILLER, Associate Editor.

HAMILTON, ILL., FEBRUARY, 1914

Vol. LIV.—No. 2

EDITORIAL COMMENTS

Foul Brood and Moths Combined

On our front cover we give the photograph of two brood-combs taken by Inspector Frank C. Pellett, on one of his tours this summer. Aside from the fact that the combs are examples of the worst possible type of American foul brood, they are also being devoured by the moths. Notice the honey at the top of each comb. Even if hives be completely closed from bees, as soon as the moths destroy the comb sufficiently, the honey will run, leak out of the hive, and spread infection.

Demuth's Golden Words

Right in the center of page 15 are given some words of G. S. Demuth, that should be the central thought of every beekeeper. He recommends *the breeding of a bee which has the storing instinct to an intensified degree.* And that is a work, not alone for experts or specialists; but every beekeeper, beginner, as well as veteran, should have his part, whether his colonies be few or many. Let it be earnestly urged upon the young beekeeper, ambitious to be in the lead, that he can now make his plans for the coming season to breed from his best stock. He may have no exact knowledge as to how his colonies compare for efficiency, but he can make a fair guess as to which colony or colonies exceeded the others in their performance in 1913; and then let him make up his mind that during the season of 1914 he will keep close tab of all colonies, putting down in black and white their performance, and then he may know definitely what stock to breed from in 1915.

Pouder's Parcel Post Package

One of these packages, as illustrated on page 10, was received at Marengo. A slit was made down through the paper with the small blade of a penknife, allowing it to be easily peeled off. Then the cone was stood upon a plate to be placed on the table. Candied honey could hardly be put in a more tempting form, only the cone looks pretty tall for the size of the base.

Bees of Same Colony Fighting

On page 21, Arthur C. Miller says when combs with adhering bees are taken from the hives of some colonies and leaned against convenient objects, and then returned to the hive after 10 minutes or more, a violent fight takes place between the bees of adjacent combs; and on page 8 Dr. Miller says this is something new to him. Perhaps the kind of bees has something to do in the case. Arthur C. Miller writes: "The bees that did the fighting were pure Cyprians. Later I had similar experiences with crosses of that race, and some 'Goldens' now and then will do more or less quarreling among themselves."

J. L. Byer Right—and Wrong (?)

Mr. J. L. Byer, you are quite right in thinking that we had a wonderful flow of honey in 1913, page 14. I never knew its equal. But in comparing Ontario with Illinois it sounds as though you think I have a better place for good crops than you. If so, I think you're wrong. You have other things than white clover to depend upon. I have no basswood to speak of, and little of anything else that can be counted on for a crop. True, alsike is beginning to come in, and fall flowers make a nice little supplement to the white-clover crop—when there is a white-clover crop—but everything aside from white clover amounts to so little that when white clover fails I count it a year of failure. And years of failure are unpleasantly frequent. If I were to start afresh in beekeeping, I wouldn't be likely to pitch my tent at Marengo.

But when you speak of "the woman in the case" deserving credit, you are dead right without any "if" whatever. Miss Wilson did nearly all the work, and when you want work thoroughly done just set a full-blood Scotchwoman at it. When Miss Wilson tackles a job I can feel a good bit easier about its being done right than if I tackle it myself.

Early Breeding In and Out of Cellar

On page 20, Dr. Bonney speaking of chaff hives, says: "If given a choice between dovetail hives for out-of-door wintering and putting the bees in a cellar, I will take either of these hives, because being warm the bees begin breeding early, earlier than in the cellar." On the face of it the beginner is likely to understand that bees in a chaff hive breed earlier than in a cellar, because bees in the chaff hive are warmer, which is entirely true; and he is likely to understand further that the chaff-hive bees are warmer than those in the cellar because the warmer place of the two. Instead of that we have the paradox that the chaff-hive bees are warmer *because they are in the colder place.* It is well known that in general bees begin breeding earlier outdoors than in cellar, and that without regard to the kind of hive used. Take two strong colonies in single-walled hives, cellar one and leave the other outdoors with little or no protection, and breeding may be expected earlier outdoors. The outdoor bees breed earlier because warmer, and they are warmer *because* in a colder place. The explanation is simple. An illustration will help. Take a sitting-room with a stove in it. The colder the day the hotter the fire kept in the stove. Same with the bees. The colder the surrounding atmosphere the higher the bees keep the temperature in the cluster by means of greater activity and consumption of stores. So taking three similar strong colonies, in cellar, in chaff hive outdoors, and in unprotected single-walled hive outdoors, other things being equal we should expect the earliest breeding in the unprotected hive, and the latest in the cellar.

Putting on a Super Upside Down

C. B. Palmer writes endorsing Dr. Miller's plan of using bottom starters in sections, but he put on one super upside down, and says if you want to see how much honey bees can cram into one super, just try one upside down. That plan has never been tried "in this locality," but one is curious to know in how many pieces each section had to be cut to get it out of the super.

Mr. Palmer is the man who ships section honey in candy pails. In the past season he shipped thus in very hot weather, and not a single section out of a thousand was broken.

"Canards"

Some bee-papers of Europe are stirred, and more or less satirical, over the information that an Indiana beekeeper has succeeded in breeding a stingless race of bees. We have not heard of it on this side of the ocean. Such news are properly called "canards" (ducks), for they can fly fully as fast as wild ducks.

Foreign Bee Journals

For some months past we have been receiving both a Russian and Japanese Bee Journal. In spite of our boasted civilization and advancement, we have been unable to find a student capable of reading either. We will venture the assertion that our Japanese and Russian contemporaries are not so illiterate, and that they have plenty of scholars capable of reading the American Bee Journal, which we gladly send in exchange. So let us not look at the mote in our brother's eye, but remove the beam which is in ours.

A Generous Secretary

We receive the following letter from our good friend J. F. Diemer, Secretary of the Missouri State Beekeepers' Association. No comments are necessary. The beekeepers of Missouri should be proud of their secretary:

> "I wish you would announce in the American Bee Journal for February, that while the secretary was allowed 25 percent of the collections, by vote, he will not accept it. Every cent paid to me by the charter members of our new association will be used to the best advantage of the association. I admit that the secretary has lots of work to do, but I will enjoy the work more than I would the percent, if beekeepers throughout the proud old State of Missouri will help make this association a thoroughly successful one, to the credit of themselves and the industry."
>
> J. F. Diemer.

Exaggeration

The reader will find in this number the translation of an article written for L'Apiculture Nouvelle by Mr. Crépieux-Jamin, who is not only an experienced apiarist, but a capable physician, and perhaps the most renowned graphologist in the entire world.

The article has to do with exaggeration in statements on honey and its virtues. The same writer also criticizes the eulogies given to bee-stings as a *sure* cure for rheumatism. We do not give this part of his argument, because it has to do with an extravagant statement made in some European bee-journals by an Austrian physician, Dr. Terc. Mr. Crépieux-Jamin argues that rheumatism is due to various causes, and is usually only a symptom of some organic trouble, such as arthritism. He asserts, therefore, that it is useless generally to rely upon it to cure, or to have more than a local effect; that it cannot remove or "modify the deep-seated causes of arthritism which must be looked for in heredity, in a too sedentary life, too rich food, the use of alcohol and meat, a damp climate or other causes." That is probably why we have contradictory statements as to the effect of bee-stings in rheumatism. They are not universally efficient and are not suited to every case.

Mr. Crépieux-Jamin had the sorrow to lose his devoted and amiable wife on Dec. 11 last, at the age of 53. She is regretted by all those who knew her, and our heartfelt sympathy goes to the bereaved husband.

The Two Foul Broods

More and more it becomes apparent that confusion arises from having the name "foul brood" applied to two separate and distinct diseases. The case would be different if the distinction were always made between American and European foul brood. Unfortunately the distinction is not always made—indeed, not often. So we are often in the dark. For illustration take that interesting summary of the Minnesota inspector's report, page 8. We find that 6 percent of the colonies inspected were found diseased (but with what disease?), and that 10 percent of the diseased colonies were destroyed. That probably means that combs, bees, everything but the hive itself was destroyed. If one out of ten diseased with American foul brood was so bad as to warrant destruction it was bad enough; but it is hard to imagine one out of ten so badly diseased with European foul brood as to make it advisable to destroy bees and combs.

For the sake of the foul-brood laws it may be necessary to call the two diseases each by the same name, "foul brood," but let the distinctive term "American" or "European" always be added. It may be argued that it takes up too much room to write out the full name "American foul brood." Well, then, give the contraction, "A. f. b.;" that's even shorter than to write the indefinite term "foul brood."

Those Hive Covers

Wesley Foster doesn't approve of the hive covers he thinks he saw in my cellar (see page 12). Sorry I wasn't there, Wesley, to demonstrate those covers to you. I should have orated something after this style: "Whatever difference of opinion there may be between us as to painted or unpainted hives, we are at one in agreeing that no unpainted wooden cover should be tolerated. Please take a closer look at the covers you see in this cellar, that on account of the dim light and because of previously conceived opinion you call unpainted wood. Instead of that the surface is of zinc, and not even Colorado weather will make cracks in zinc to let the wet through upon the nice sections. Let me tell you how those covers are constructed. First, a layer of ⅜-inch boards with the grain running crosswise. Upon the outer edge of this, clear around, lie cleats ⅜-inch thick and an inch wide, upon which is a second layer of ⅜-inch boards with the grain of the wood running lengthwise, and over all a covering of zinc. I have some covered with tin, but zinc is better because it doesn't need to be painted. That ⅜-inch air-space makes the cover warmer when it is cold, and cooler in hot weather. But that isn't altogether the reason for making the cover in that way. No single-board cover of ⅞-inch stuff will remain a close fit, paint or no paint. The boards will warp. Put a cast-iron cleat at each end, so that the ends are held rigidly straight, and the whole thing will twist in a great number of cases, so that one corner will let a bee pass. The covers that you see, with boards so thin, and with the grain running in opposite directions, remain a close fit *always*. A cover of that kind costs, but it's worth all it costs."

Please dismiss from your mind the notion that I advocate unpainted wooden covers. Now about unpainted hives "gaping open at all the corners." I never kept bees in Colorado, but I'm just wondering whether you *know* from actual trial that unpainted dovetailed corners, properly nailed, will gape, or whether you're just guessing. Years ago I had gaping corners, and they were painted at that. But they were not dovetailed. My dovetailed corners don't gape. If your climate will make them gape, it would seem that at least some of mine should do a little yawning. But they don't. If yours do, that's no concern of mine.

Error in Advertisement

We acknowledge error in setting up prices in Mr. H. H. Thale's advertisement in January issue. The prices will appear correctly on the advertising pages of this number.

60 Pounds Net on Cans Shipped in Interstate Commerce

There has been no little complaint from honey dealers that beekeepers were too careless in filling their cases of honey. For instance, one firm reports a variation in the net weight of cases in one carload of from 113 pounds to 129 pounds, where the net weight should be 120 pounds. Naturally such practices will reflect directly, in the end, upon the producers. In connection we quote from a letter on this subject from Mr. Frank Rauchfuss, of Colorado, considered as one of the best authorities on honey packing and shipping:

"Place yourself in the dealer's position in order to realize what a hardship this difference in weight is causing. Honey in Interstate Commerce *must* have a specified net weight marked on the cases, and in so far as 60 pounds net is the standard for a 5-gallon can of honey, 60 pounds of honey must go into each can, even if the doing of the same causes additional work. It is considerable more to the other party that is handing your honey to the consumer than it is to you. If the honey is extracted warm, and it is somewhat difficult to get 60 pounds net weight into the can, you can allow it to cool and then put enough more in to make the required net weight, or, if the honey is packed at the out-yard where there is no proper facility for weighing, you should make sure that not more than 60 pounds is put into the can, and when the honey is brought home, sufficient more is put in to make each can 60 pounds net."

MISCELLANEOUS NEWS ITEMS

Red-Clover Bees.—"When we are asked whether we will guarantee that one strain will work on red clover, we always reply in the negative. All we can honestly say is that they will work on red clover if any strain will; and even then only when conditions are favorable." That is fair and honest. The "red clover tongue" is a myth.—*British Bee Journal.*

Bee-Culture in Oregon.—We are just in receipt of a 140-page book put out under the supervision of the Oregon Agricultural College, entitled "The Oregon Farmer." The book deals with farming conditions, etc., in that State. One chapter, entitled "Bee-Culture in Oregon," was written by Mr. H. F. Wilson, Assistant in Entomology. Mr. Wilson has gone very thoroughly into his subject with the figures available. He gives a map showing the distribution of bees in the State, and a table giving the results of personal letters sent out to over 400 beekeepers.

Apiaries ranging from one to 700 colonies are found in the State. Although most of the farms reporting bees are to be found in the Willamette Valley, yet the largest commercial apiaries are located in central and southern Oregon, where alfalfa is the main source of nectar.

Professor Wilson advises thorough investigation before locating. He asserts that beekeeping is yet in its infancy, and that there are many favorable localities where bees could be kept on a large scale for profit.

Any one interested in procuring a copy of this booklet should address Oregon Agricultural College, Corvallis, Oreg., asking for a copy of the 1913 Oregon Farmer, issued by the college.

Northern Michigan Meeting.—The Northern Michigan Association, affiliated with the National Beekeepers' Association, will hold its meeting at Petoskey, Mich., March 10 and 11, 1914. The court room of the City Hall has been promised us by Mayor Reycraft and a very low rate of $2.00 per day has been given us at the Cushman House. Many prominent beekeepers are expected, and a very interesting program is promised. For further information address the secretary, Ira D. Bartlett, of East Jordan, Mich.

National Field Day Proposed for Canada.—The Toronto Beekeepers' Association, which has been holding an annual field day each year, has become so enthusiastic over such meetings that it proposes, if possible, to make the meet a national affair. The following is a letter written to sister associations in Canada, asking for their co-operation:

The Toronto Beekeepers' Association, at a recent meeting, having decided to hold their third annual Field Day meet on May 24, at the apiary of Mr. H. G. Sibbald, of Forks of the Credit, extend to you a cordial invitation to unite with them to make this event not a local effort only, but a national annual gathering of the most progressive of our ranks.

Last year the Toronto Beekeepers' Association was very fortunate in securing the co-operation of the Peel and Halton Association, and through their united efforts succeeded in holding the greatest Field Day meet ever held in Canada. But the promoters of these meetings have not been satisfied to let the matter rest at this point. They aim to build up the annual Field Day meet, which will be to the fraternity what the Canadian National Exhibition is to the exhibition enterprises of the world.

You will readily agree with us that no local organization, no matter how strong, can carry out such an undertaking alone. It must have the co-operation and active support of all the beekeepers' associations in Canada.

In view of this fact, we will cheerfully retire our claims to priority for the welfare of the larger movement. Assuming that you accept the principle, we would suggest that this movement be called the Canadian National Annual Field Day Meet.

Until the movement has been thoroughly organized and put upon a sound basis, we, the Toronto Beekeepers' Association are prepared to take care of all the routine and clerical work involved in such a departure with one stipulation only, and that is that the local associations undertake such campaign work as will be necessary in each county to create a keen interest in the meet.

We are in receipt of a communication from Mr. Morley Pettit, Provincial Apiarist, giving the movement his blessing, and promising an enthusiastic co-operation.

We respectfully urge on you the importance of immediate attention to this communication. You cannot get your association in motion too early. Experience of the past two years has taught us the necessity of starting at once, as this will take at least three months to get all the details worked out.

While we feel that it is your privilege to suggest a program, we are prepared to submit an idea or draft, after which we can proceed to get a different program under way.

Chas. E. Hopper, *Sec.*

Death of C. N. White.—We regret to record the death of Mr. C. N. White, of St. Neots, England, whose family picture we gave on page 420 of the December number. He was a very active and progressive member of the British Beekeepers' Association. He wrote articles on bees under the *nom de plume* of "Iva." He died Nov. 18, 1913.

Exporting to the United States.—Inquiries have been made through the consul-general at Auckland regarding the shipping of honey to the United States.—*New Zealand Farmer.*

Mr. Scholl a Poultry Expert.—This office is in receipt of the catalog of the Guadalupe Valley Poultry Association of Texas. The bulletin was compiled by Mr. Louis H. Scholl, our correspondent in Texas. He was also on the premium-list committee of the association which held its show on Dec. 11 to 14, 1913. The best cup given at the show is called the "Scholl Cup." It must be won by the same exhibitor three years in succession to become his property.

Second-Hand Cans Prohibited.—There is a government provision in Australia to the effect that second hands cannot be used for the storing of any food products. This ruling was recommended by the pure-food commission, with the direct aim of prohibiting the use of tins which had contained petroleum.

Good Prospects in New Zealand.—According to E. G. Ward, president of the Canterbury Beekeepers' Association, chances for a good season in New Zealand are very bright. Fruit bloom was good, and bees are in excellent shape. Clover was beginning to bloom when the report was written for the New Zealand Farmer. The seasons in this country are just the opposite of ours; they have their winters while we are having our crop and *vice versa.*

Honey Yield, 500,000 Pounds.—The honey production of Yakima Co., Wash., for 1913, totaled 500,000 pounds, one-third of the entire product of the State, according to J. B. Ramage, secretary of the State Beekeepers' Association. The Walla Walla valley is credited with producing as much as Yakima county, and the rest comes from all over the State.—*Exchange.*

Apiculture at the Panama-Pacific International Exposition. — Due to San Francisco's perpetual spring-time, which keeps the flowers a-bloom through every month of the year, the exhibits of bee-culture at the Panama-Pacific International Exposition, to be held in San Francisco in 1915, promise to be more extensive and interesting than anything of the kind ever seen before.

"Apiario de Luis Danger, Santiago de cuba."

The gardens about the various courts and promenades will be bright with flowers from the opening of the Exposition, Feb. 20, 1915, to the closing day, Dec. 4. In view of this, it has been suggested that many colonies of bees be kept to feed upon the flowers, and fill their combs with honey in hives of glass in full view of Exposition visitors.

Such an exhibit, to show the life and activities of a busy colony of bees, would acquaint millions of people with the marvelous science of apiculture.

It would afford every man, woman and child visiting the Exposition, an opportunity of watching bees gathering honey from the flowers. By walking through the gardens to the glass-cased hives, the visitors then could see the bees on the combs contributing their share to the honey output. The queens, workers and drones would be seen in their daily life, performing their individual duties in the great hive organization.

Manipulating a Modern Hive in Cuba, Luis Danger, of Santiago de Cuba.

Thomas G. Stallsmith, chief of the Bureau of Agriculture, under which apiculture is classified, conceived the idea of such an exhibit and presented it to prominent beekeepers. He has received many promises of co-operation in the matter of exhibits, and it is expected that this will be one of the most striking and fascinating features of the Exposition.

Both the California State Beekeepers' Association and the National Beekeepers' Association have been invited to hold their 1915 conventions in San Francisco during the Exposition. While neither organization has taken definite action, it is hoped that they will assemble in San Francisco during that year, which would add greater importance to the apiarian displays.

The California State Beekeepers' Association, at its convention last year, sent an invitation to the National association to assemble in San Francisco during the Exposition year. At the same time the State organization took steps toward preparing for its own exhibit, and M. H. Mendleson, of Ventura, Calif., was given charge of this work.

The idea of the two conventions was heartily endorsed by the Stanislaus County Beekeepers' Club, a California organization, and its members were greatly enthused over the project.

While it is expected that a great display will be made on bees, the bi-products of the industry will not be overlooked. Honey, wax and kindred products will be given due attention in the Palace of Food Products, and exhibits from many parts of the United States are expected.

H. M. Wright.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

More About Our Crop of Honey

Editor Dadant is interested to know something more about our crop of honey, and has sent a list of questions as follows:

1. "About how many frames did those bees have filled with brood at the height of the breeding season?"

The hives used were 8-frame, and it was unusual to find an outside frame that contained no brood. Perhaps more often were the two outside frames fairly well filled. Of course, some pollen was present, but there was very little honey in the brood-chambers. Many of the central combs were filled with brood, every cell being filled up to the top-bar. Some say that with the frames as deep as the Langstroth, there is always a space of one or two inches under the top-bars filled with pollen and honey, and they make this an argument for shallower frames.

Our bees don't work that way. During the height of brood-rearing, as already stated, they have little or no space between the brood and the top-bar. Possibly in hives where it is the rule to have brood one or two inches below the top-bar, it is because of the sagging of the foundation in the upper part of the frame, stretching the cells so that the queen will not use them. With our foundation splints there is no sagging. A few colonies, which were allowed two stories up to the time of harvest, had 12 or 14 frames of brood.

2. "How do they compare with each other for proportion of Italian blood, and which were the best yielders, the nearest to pure Italians or the nearest to common bees?"

Yellow blood predominated, some classed as "very yellow," having more than three bands, ranging from that down to "dark." In reporting according to color, those should be left out which changed queens during the season, since in such colonies there might not be uniformity of color from first to last. Of those which held the same queen throughout the season:

1 very yellow colony gave	384 sections
3 yellow colonies averaged	345 "
6 3-banded colonies averaged	337 "
10 colonies, mostly 3-banded, averaged	316 sections
3 hybrid colonies averaged	311 "
1 dark colony gave	309 "

This seems a radical departure from what prevailed a few years ago, when the best storers were likely to be the darkest, whereas at present there seems a reversal of that rule, and the number shades from 384 for the yellowest down to 309 for the darkest. Now will the rule be again reversed next year? Only a year previous the two best colonies were among the darkest.

3. "Did you use any queen-excluders?"

No excluders were used to keep the queen from going up into the sections.

4. "If so, did you make any comparison of results between colonies with and without excluders?"

No comparison could be made. With a very few exceptions, however, the queen never went up into the sections, so that there would have been no difference made by the use of excluders, unless there should have been a slight hindrance to the bees in passing through them. It is only fair, however, to add that in the few exceptional cases there were some in which excluders would have been a decided advantage, not only because a number of sections were spoiled by brood, but because sometimes the bees fooled us by putting queen-cells in the sections. In that case we were helpless, as we were not looking for queen-cells in sections, and could hardly have seen them anyway. But in nearly all cases the sections were taken off before the queen-cells had time to hatch, there being only one case during the whole season where the cell actually hatched. In that case there was no other brood in the super; just the one queen-cell alone.

5. "Of course they were not cross while harvesting this big crop, but it would be interesting to know whether any of them were cross and when."

Unfortunately it is hardly true to say that "they were not cross while harvesting this big crop." There were some cross bees, one colony in particular being very cross, and that right in the height of the flow, and one of the very best colonies, too. We knew there were cross bees in that vicinity, and the writer very strongly suspected the culprit, but did not want to admit it, as she knew that if convicted that queen's head would have to come off, for Dr. Miller is merciless in that respect. But one day it was so very plainly evident that it could not be ignored, so the search for her was reluctantly begun, only to disclose the fact that the colony was already queenless. A new queen of best stock was accordingly given, and the temper of

The scenery is inspiring in Colorado, and you get an excellent chance to see it going from one mountain valley to another.

that colony began to improve immediately, not even waiting for the new generation of bees.

Giving a more general answer to your question, it may be said that the season was of such a peculiar character that it could hardly be said that bees were crosser at one time than another. In most years there will be days now and then when the flow lets up a little or the weather is bad, and when the bees will be cross. This year it was good gathering weather right along. If a shower came, it came in the night, and the next day the bees were "on their job." For all that there were some cross bees all through the season. How many colonies were responsible for this it would be hard to say. In the main, our bees are better natured than they were a few years ago. In the judgment of the writer their tempers are vastly improved; although Dr. Miller hardly agrees with that view. The difficulty in a correct judgment arises from the fact that a very few vicious colonies may furnish enough cross bees to give a bad reputation to the whole apiary. For years selection in breeding was made with the sole view of getting bees that would do the best storing, without any regard to their color or their temper. The result was an increase of the amount of honey gathered, with an unpleasantly greater increase in the amount of stings. The bees were mostly hybrids of the vicious sort. Then pure Italian stock was introduced solely for the sake of improvement of temper, and now our bees are almost entirely Italians. All the same we are constantly sifting out those that show too much temper.

Alfalfa or Sweet Clover Hay vs. Timothy

Mrs. C. Theill says in the Practical Farmer:

"A ton of alfalfa or sweet clover hay is worth three tons of timothy when fed in conjunction with corn products to cattle. Where one ton of timothy grows, two tons of clover or from three to five tons of alfalfa or sweet clover might have been grown. Furthermore, every spear of timothy hay takes fertility from the soil in the form of nitrogen, and must some day be replaced to retain the fertility of the farm, whereas every spear of clover or alfalfa has the power to and does take out of the air nitrogen, and deposits it in the soil and leaves the ground richer in that necessary element."

Robert E. Foster, of Rifle, Colo., dumping a late swarm into a weak colony from his gunny-sack swarm catcher.

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

The Texas Foul Brood Law

It is to be regretted that the beekeepers of the Great Lone Star State, one of the leading honey producing states in the Union, are paying so little attention to organized effort. One of the results of this lack of interest is that today we are without protection against foul brood. We have an excellent foul brood law, one that enables us to do effective work, but this law is entirely inoperative on account of the lack of money to carry on the work. Without a sufficient appropriation by the Legislature the best foul brood laws in the world mean little.

FUNDS ARE NEEDED.

It takes money to inspect bees, especially in as large a state as Texas. It behooves the beekeepers to consider this well and prepare now to take the proper steps, that we may obtain from the next Legislature the money required and protect our interests.

FOUL BROOD WILL SPREAD.

Unless we unite and pull together, we will not gain the results we should; and until we awaken to the fact that we must "roll up our sleeves" and work together with a determination to check the ravages of foul brood this disease will continue to spread and make the situation worse with continued delay.

There have recently been several instances where diseased bees were moved from one place to another. This will continue as long as there is no prohibition backed by lawful enforcement. There have been complaints to the effect that foul brood diseased bees were moved into territory already occupied by healthy bees of progressive bee-keepers. What are they to do if our foul brood law is inoperative?

WHY THE LACK OF INTEREST?

There are many beekeepers entirely unconcerned. They do not feel the need of the inspection. There is no foul brood in their apiaries and, as far as they know, none in the neighborhood. Little do they realize how dangerously mistaken they are in waiting until it actually appears in their apiaries or even in the neighborhood. It is far wiser to prevent the disease than to try to eradicate it after it has come. Foul brood is not easily eradicated. For that reason the old saying, "An ounce of prevention is worth a pound of cure" applies most excellently here. By all means let us not delay in giving this our most prompt attention and support. Let us decide upon the most effective method for uniting efforts with a view of getting ample appropriations with which to operate our law.

HAS THE WORK BEEN SATISFACTORY?

Much of the lack of interest in the foul brood inspection work, on the part of beekeepers has been due to doubt as to the efficacy with which the work has been handled. Beekeepers differ in their ideas as to how, and by whom it should be done. And while some have proclaimed the work entirely satisfactory there are those who believe it has been carried on in too much of a desultory manner to do the most good and that entirely too much attention has been given to certain localities at the expense of others that needed inspection just as badly. It has even been averred that a certain amount of favoritism or partiality toward one or two particular localities has been shown. While the work has been attended to with the greatest vigilance in one or two chosen fields, complaints were made that foul brood bees were being moved from one place to another or exposed in various ways in other territory. It is doubtful, however, whether these cases were promptly reported so that proper attention could be given.

SYSTEMATIC WORK NECESSARY.

It is a difficult task to undertake the foul brood inspection work over so large a territory as that of the State of Texas. This accounts perhaps for more work being done in some localities with seeming neglect of others where inspection was needed as much or more. Just which method is the wisest to follow is difficult to say without a thorough trial. The most satisfactory results for the State at large cannot be obtained by diverting the entire attention to only one or two localities, even if the disease could be wholly eradicated there. It is unfair to the balance of the State. It is better to check the spread of foul brood in all localities alike, than to eradicate it entirely in one or two, permitting it to spread unhindered in others. Even then, the question as to whether the right kind and amount of work by those in charge is done should interest the beekeepers of our State.

IN UNITY THERE IS STRENGTH.

It is to be hoped that there will be no further delay on the part of the beekeepers to a full realization of the necessity of providing for bee inspection work in this State. When our next Legislature meets, let us be prepared for a strong, united effort to obtain the much needed appropriation. Let us strive to bring forth every argument having a bearing on this one most important subject—the necessity of fighting the ravages of foul brood. We are dependent upon the little honey-bees for a livelihood, and they can do their best only in a healthy condition. We are compelled by duty to take the proper **care and precautions** to protect them from the ravages of disease. Working together it can be done. "In unity there is strength."

Mr. K. G. Hall, of Molina, Colo., and His Honey House.
Thirteen hundred cases of fine comb honey were stored in this house. Mr. Hall operates about 700 colonies.

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Locations Found by Traveling

The practice of a number of young men in spending considerable time traveling about over the country visiting beekeepers and working in different sections of the country is to be commended. The young men who have the opportunity and avail themselves of it will have a fund of information that will be worth much to them. Such an experience will teach them the value of a bee location where the men already there are uniformly successful. This is an acid test and one of the most reliable. There are probably no locations in the whole United States where a young man could not get a start without crowding others too closely. There are overstocked localities, but where they are overstocked the bee men are not uniformly successful.

The young man who travels over the country will find locations as good as the best in districts of commercial production where opportunities are almost unlimited, for one man at least.

JUST AS AN EXAMPLE.

Alexander Hilton wanted to keep more bees. He had one hundred and seventy-five colonies that he had increased from one hundred and fifty that season besides harvesting sixteen thousand sections of honey that brought him eighteen hundred and fifty dollars. Then he had wax, vinegar, and extracted honey to bring his sales well past the two thousand mark. But he wanted to keep more bees. He had read the bee journals, all the government bulletins, and had attended every bee convention within two hundred miles. He wondered if his bank would help him any. An inventory of his assets and liabilities was made out and he went and had a talk on bees with his banker. He told what his bees had done and how he had guided them in their work. The banker at once realized that Hilton knew his business, especially when Hilton said he wanted to buy two hundred two pound nuclei in the south, ship them north and put them in the new hives that he would prepare. He convinced the banker that he knew what he was about and that he had ample security for a loan of a thousand dollars to swing the deal. Hilton has ordered his nuclei by making a small payment down, the loan from the bank not being needed until May when the nuclei will be delivered. Alex. Hilton may not get his hundred pound crop this year but the chances are that he will well nigh pay for those nuclei.

CORRECT DISPLAY OF HONEV.

Comb honey is in a class with fruit. The fruit stands have demonstrated the value of massing fruit together for display. Five red apples do not look so red and inviting as five hundred. What the customer requires is that his eye shall be filled with color. The same holds true of a honey display. The twenty-four pound section case for comb honey is convenient and sanitary, but it is not pre-eminent as a seller of honey. The grocer who buys five cases of honey, empties them all into a show case and fills it full, will sell much more honey than if he bought five cases, put four under the counter and one out on top of the counter for display. This is being forcibly demonstrated by a Boulder grocer who is selling hundreds of dollars worth by filling an upright bakery show case with several hundred pounds of honey and making a display that catches the eye of every person that comes into the store. He says that his honey business is double that of any year previous. Many grocers are practicing this method as the writer saw recently in Kansas City, St. Louis and Chicago. The need and use of the glass front shipping case is gradually passing. The sooner it does the more money will be saved the beekeeper.

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

Moderate but Steady Cold

A letter from a friend in Ohio, under date of Jan. 7, says that they have 30 inches of snow on the level. In November they had a like amount, but it went away before this latter fall. Here we have 3 inches of snow, and that is about all we have had this season. Conditions seem to be reversed this winter, but, of course, we may get lots of snow and severe cold later. In the meantime we have been enjoying moderate weather for our latitude, and the bees appear to be wintering nicely and quietly. Although it is moderate, we have not had any days since early in December that were warm enough to tempt bees to fly. This kind of weather is much better than the warm spells we sometimes get in January, which have a tendency to start the bees rearing brood too early in the spring.

February Work

Like the preceding month, February in Ontario is a month of practically no work in the apiary, as usually our bees get no flights until March, and the snow that may accumulate around the hives is left alone until the days are warm enough for the bees to fly. These days of comparative leisure to the man who is engaged in beekeeping for a living, give time for reading, etc., while the system is recuperated so as to be able to stand the strenuous summer months.

Naturally there is wax rendering, and its exchange for next year's supply of foundation; and frame nailing and wiring. Some advise having foundation in frames ready for use when needed, but as our need of frames of foundation is never apparent until the season is on, I never put the foundation in until assured that it will be needed, as filled frames are a nuisance to carry over winter, and foundation thus held is apt to deteriorate more or less.

Italians and American Foul Brood

Owing to the almost undisputed claim that Italians are more or less immune to "black" or "European foul brood," claims are constantly being made that they are to a certain extent immune to American foul brood, also. I believe any claims that Italians are exempt from the ravages of American foul brood is mere twaddle. In my experience as an inspector, as well as in dealing with this disease in my own apiaries a few years ago, Italians were more often affected than other races. I judged this to be caused by the Italians' well known propensity for robbing. There is no question but that they are better to combat European foul brood than blacks, but what is the use of confusing the issue and making claims that cannot be substantiated?

Leaky Joints and Leaky Barrels

As to closing leaky joints in feeders, etc., page 7, what is the matter with using paraffine for this purpose? It is much cheaper than beeswax, and melts at a lower temperature. I have used it with entire satisfaction more than once. Is the fact generally known that for a ready "patch" for a leaky wooden barrel nothing is quite as good as rubbing over the hole a quantity of common hard soap? In shipping barrels of honey, more than once this handy article has helped me out of a difficulty. Of course, it is better to have the barrels so coopered that there will be no leak, but sometimes "accidents happen in the best of families," and in such cases a remedy comes in handy.

Profits in Beekeeping

The figures on page 10, January issue, relative to the profits in beekeeping in Oklahoma are, in common with other boom literature, misleading, to say the least. The honey is all valued at 15 cents per pound, and if that refers to comb honey, the price is probably not such an exaggeration. If it refers to extracted, it is misleading, for while 15 cents can be obtained in a retail way for some sections, such a figure is beyond reason at the present when wholesale prices are considered. But the greatest exaggeration is in figuring all the increase at $10 each, net. Are bees commonly worth $10 per colony in Oklahoma? If such is the case there should be a bonanza in rearing bees for sale instead of honey, and needless to say the price of bees would soon come down. But assuming that they are worth that figure, what about the cost of hives, foundation, frames, etc. are they supplied free to the beekeepers by some person in that favored locality?

I maintain that the figures are misleading, and the association responsible for the report.

Marketing of Honey Should be Studied

We are told on page 15, that Mr. C. D. House assured the beekeepers at the meeting held in Rochester, N. Y., on Dec. 2, that Canadian beekeepers had solved the question of setting and maintaining the price of honey by a system of getting reports from all over the country and then making recommendations to the beekeepers as to what price to ask for their product. We *thought* that we had at least partially solved the problem, but this year, with a bumper crop in many localities, and a "tight money market" in all localities, seemingly, things have gone a bit differently from what we anticipated. When the public is not buying an article that is not fairly abundant, problems arise that are hard to solve satisfactorily.

As stated in the January issue, it is the opinion of many of us that a period of conservatism in the matter of honey production is a sane and wise policy to pursue for the next few years at least. Instead of preaching "Keep more bees," or "Make more beekeepers," the solution of the marketing and distribution problems would be more in order. As president of the Ontario Beekeepers' Association for the current year, that policy is the one that I shall endeavor to encourage, and I shall deem it a pleasure to hear from as many of the members as possible that are interested.

◆

Honey Production as Ranked With Other Business

I have read what Mr. Pellett has to say on page 32, January number, with much interest. In some of his contentions I agree with him, while on some other things I entirely disagree. Boom honey as much as you will, yet it will never occupy a place on the table along with butter, eggs, cheese, etc. These staple articles were never higher in New York State than at present, yet honey is a drag on the market. Not properly advertised you will say. Granted that is the case, and yet what about the advertising of eggs, etc.? Reason as you will, when money is scarce with the workingman he will spend what he has for butter and eggs, and for sweets he will buy the cheaper syrups instead of honey. With modern methods of honey production, along with the instructions given at colleges, I believe the business of honey production can easily be overdone. I cannot understand why men depending upon it for a living should be so anxious to encourage competition. A few years ago the fruit and canning industry was overdone. Did the men behind the factories advise more to go into the business and then get busy and advertise their product? Hardly. They advertised all right, but at the same time they curtailed production for a year so as not to glut the market. Besides fruit raising, poultry keeping, etc., are not in the same line as beekeeping, for while all our neighbors can raise fruit or keep chickens, the *locality* will not be overstocked. With bees it is different, and overstocking is very easily accomplished. Overstocking is being done now in some localities by men who are getting their chief instruction from colleges, etc. The beekeepers have been largely responsible for this since they urged that this subject be placed upon the curriculum.

"If the business of honey production is to take rank along with other lines," says Mr. Pellett. Ah, there is the rub. We do so like to be as other people. The Israelites of old had the same desires, seemingly, and wanted a king. Their request was granted, and they got more than they asked for. This may be a crude illustration, but in my humble opinion it describes very nicely the attitude of many who are continually booming beekeeping, and who do not think there is any danger of its being overdone. Look out that such a policy does not bring "leanness" in the end, to the very business they are so anxious to place on a pedestal, so that it will be like other callings.

NOTES FROM ABROAD

The Home of My Boyhood

BY C. P. DADANT.

THOSE of you, dear readers, who have been born in the spot where you now reside may not find this article interesting, but I am very sure it will appeal to those who, being like me on the downward path, have long ago left the scenes of their childhood and would like to see them again. But it must interest mostly those who, like me, are now citizens of a country differing from that of their youth, in language, customs, climate, culture and habitations; where even the flag is different.

Think of returning, after 50 years of absence, to the spot where you went to school, where you left some of the associates of your games! But the bright-eyed maiden of 24, who taught you some of the "Mother Goose" stories is now a white-haired, wrinkled old lady of 74. The little boy who could barely walk and say "papa," is today a respectable business man and a grandfather.

The city of my birth, Langres, is one of the oldest in Europe. Under the Roman rule, at the dawn of the Christian era, it was already a city, Andomatunnum, the capital of the Lingones. It is on a high plateau, 600 feet above the surrounding valley, and strongly fortified. But the ramparts and battlements, the moats and drawbridges, the thick-walled towers have lost their usefulness. A modern shell-gun, out of sight behind the surrounding hills, can send its deadly missils into the heart of the place. Fortresses are obsolete, and we hope war will, sooner or later, also become a thing of the past.

Modern ideas have overcome the thought that man is safer on the top of a cliff than in the valley. So the old fortress has permitted a cog-wheel railroad to scale its walls. But little else has changed. The city will astonish you with its white walls, that have never seen coal smoke, its quiet streets, in which only an occasional carriage or the automobile of some tourists break the monotony of the habitual farmer's cart with enormous wheels, delivering produce. Four of the five convents within its walls, and both of of its seminaries, have become vacant since France has followed the example of the United States in separating church from State. Modern ideas are replacing asceticism. Nuns are replaced by school teachers.

You may follow one of the beautiful white roads, lined with pretty gardens, winding and ascending among those avenues of trees, in Fig. 1, with a grade of less than 5 percent. In a little while you will find yourself at the foot of the walls, in front of one of the seven gates, Fig. 2. Enter this gate, and looking back, you will see the gate from the inside, Fig. 3. If you ascend upon the rampart by a narrow stairway on the right, and stand by the side of those nurses, you will see in Fig. 4, up the narrow paved street, the home of

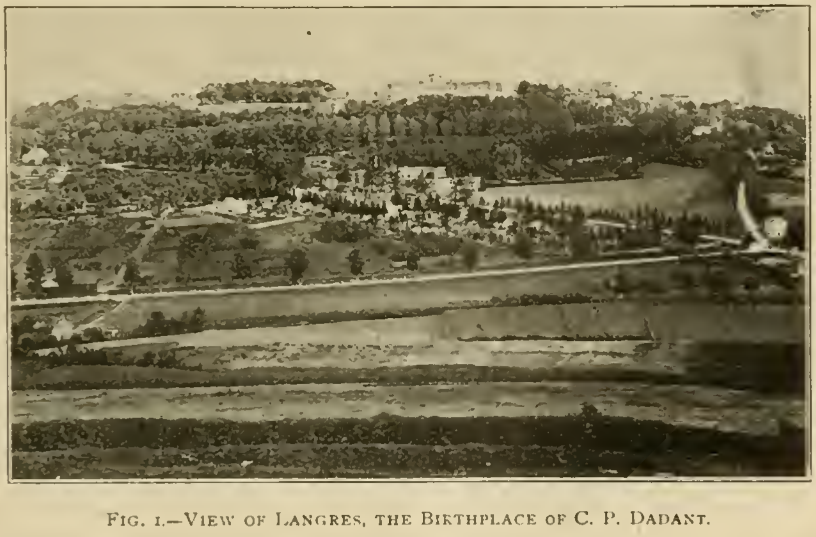


FIG. 1.—VIEW OF LANGRES, THE BIRTHPLACE OF C. P. DADANT.

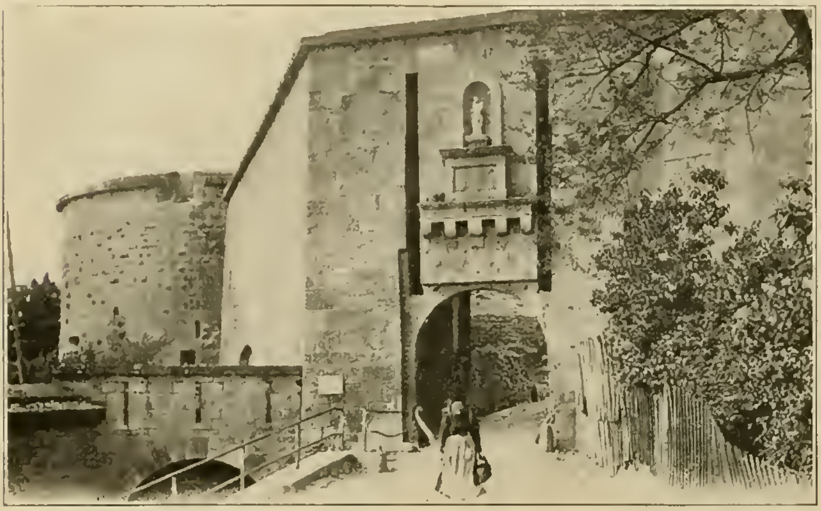


Fig. 2.—One of the Seven Gates of Entry into the City of Langres.

my childhood, behind the trees of a garden on the right.

In that old house, now inhabited by strangers, but which we were permitted to visit, I recognized every nook and corner, even to the dark closet in which they threatened to put me when I misbehaved. It was a happy visit, and the people who live there appeared to enjoy the strangeness of it as much as we did.

But, I am sorry to say, I have no bees to show you here. However, Fig. 5, which represents a fountain at the foot of the walls, is just to the left of the spot where my father used to keep his bees, in that pretty shrubbery, some 55 years ago. He gave his early experiences in the 3d and 4th volumes of this journal, after coming to America. His labors, to introduce the American methods in Europe, were not in vain, as we can testify. We reap the result of his toil, for wherever bees are kept we are at once made welcome. Two apiaries were visited in the vicinity, but the cool rainy weather, which lasted during almost our entire stay in this place, made it inconvenient to open the hives and do any more than discuss the bees. The flora is immense, and during an excursion which we made to the source of the river Marne, wife gathered some 35 different kinds of honey-yielding plants in the meadows. No hot summers here; and on Sunday, July 20, when 36 deaths from insolation were reported in Chicago, we were barely warm enough for comfort in an auto ride with friends, although we wore winter clothes and overcoats. The weather, however, was cooler than common. But in that country there are but few house flies, because of the coolness of the summers. Perhaps that is why the village peasants have no hesitancy in keeping their manure piles in close proximity to their homes. In every village, manures are a disagreeable adjunct of farm life. Reform in that line seems to us imperative. There ought to be a middle method between our American waste of manures and the European cherishing of them.

We owe an acknowledgement to the kind friends who welcomed us in Langres. Mr. Beligné, a distant cousin, whose home was our home for a few days, is a manufacturer of cutlery, with an international reputation and an active trade. He is what our American slang calls "a live wire." His house manufactures some 3000 different patterns of cutlery. Their manufacturing is all "hand work," and the labor is entirely performed in the homes of the artisans who live in the city or surrounding villages. It is an old firm, for they have in their possession announcements on parchment of one of their ancestors dating back 280 years.

We visited the old college, and there I had the pleasure of meeting one of my former school mates, who is the secretary of the Alumni Association or "Amis du Collége." The fee for joining is $1.00. So I at once became a member, and was put in possession of the records. I found my name, with the prizes won in 1856 1863. Two names of my most intimate college mates, whom I had not met for over 50 years, drew my attention. One of them was manager of the local "Savings Deposit," the other a general in the French army with headquarters at Nice. We will meet him later, as we pass through Nice on our return from Italy.

After a stay of five days in Langres, we went to Vaux, the birth-place of my father. I gave a view of this spot in the September number of the American Bee Journal. I have spoken of his work in progressive bee-culture. An idea of the results may be gained if I state that of the 40 or more local or departmental associations of beekeepers in France, 29 of which are represented by L'Apiculteur, there is not one which does not use or recommend more or less the system which he taught.

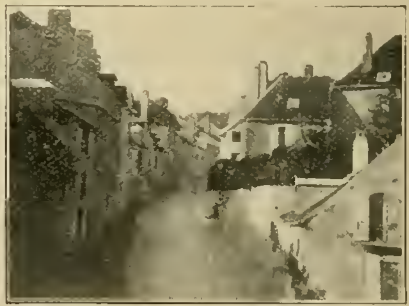


Fig. 4.—Behind the Trees of the Garden, on the Right, the Boyhood Home of Mr. Dadant.

We spent 24 hours there. After paying a visit to the school master, who keeps bees in the modern way, we directed our steps to the cemetery on the top of the cliff, to seek the graves of our ancestors. The engravings on the old, flat tombstones were covered with a thick layer of moss. Trying to decipher them was a hopeless job. We went to the home of the curate, a short distance away and asked for information. Unluckily he was unable enlighten us, for he had lived there only 25 years. My grandfather, who was the village doctor, had been dead some 46 years. But the curate's old-maid servant, a woman about 70 years old, at once volunteered to aid us. She came and pointed to a number of stones as those which we were seek-

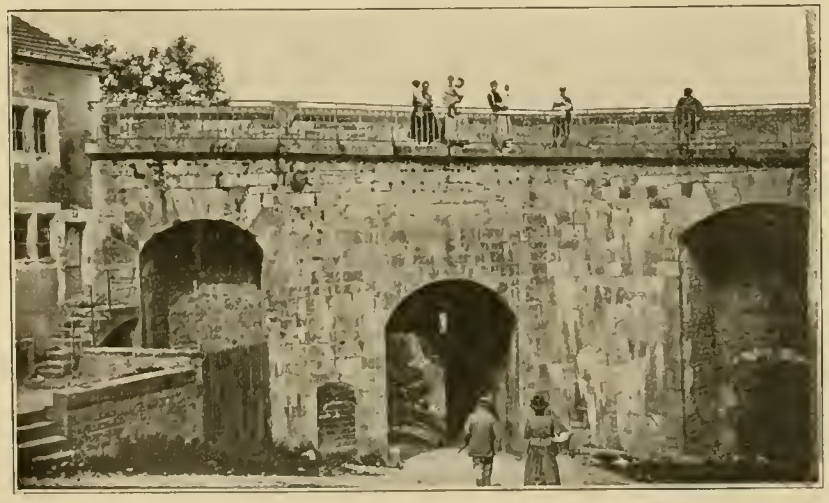


Fig. 3.—The Gate from the Inside.

ing. I took out my pocket-knife and attempted to scratch the moss out of the indentations formed by the inscriptions, in order to decipher them She smiled at my feeble attempts, and grabbing a bunch of leaves in her wrinkled but powerful hands she vigorously rubbed the moss off the face of the stones and uncovered very quickly the inscriptions. Five of my ancestors were there, and the grave of my grand-father bore the Latin words: "*Transiit benefaciendo*" (He passed doing good). A motto to be proud of! It was correctly applied too, evidently, for every old woman to whom we spoke in the village, had only praise for his memory. My cousin from Paris had come to meet us there, and we together seeked and renewed all the old memories of our school vacation days.

My next description will carry us farther south and a little more among the bees.

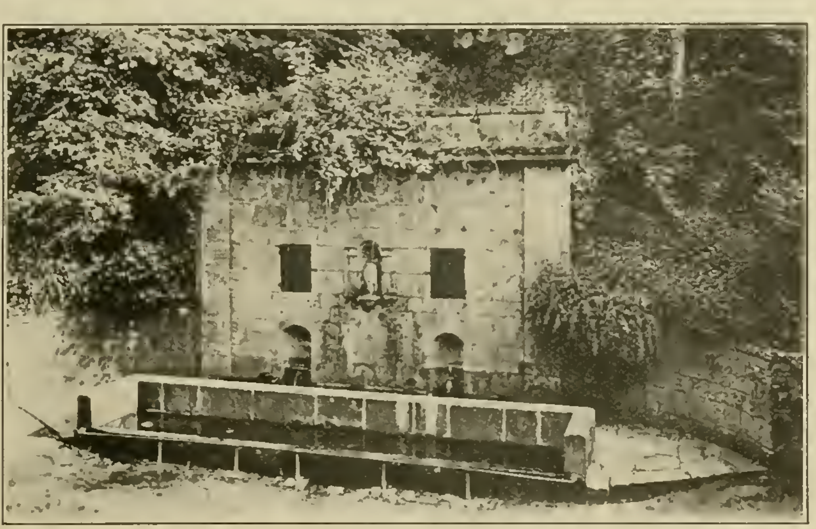


FIG. 5.—Fountain at the the foot of the wall near which Charles Dadant kept his bees 55 years ago.

Convention Proceedings

The National Convention

The annual convention of the National Beekeepers' Association will convene at the Planters Hotel in St. Louis, Mo., Feb. 17, 18 and 19, 1914. The first session will be held Feb. 17 at 10 o'clock a.m. A large hall and office rooms have been provided at the hotel.

The following rates on the European plan have been granted to the beekeepers and their friends:

For one person, rooms without bath, $1.50 to $2.00 per day. Rooms with bath, $2.50 to $5.00 per day.

For two persons, rooms without bath, $2.50 to $3.00 per day. Rooms with bath, $3.50 to $7.00 per day. For each person over two in a room, $1.00 additional.

The Planters Hotel is one of the finest in the city, and guests will be nicely taken care of.

It is hoped that this convention may prove one of our old-style gatherings, where we meet many of our old friends and make many new ones. All meetings will be open to all the beekeepers who come, whether members of the association or not. Let the beekeepers rally and make this a rousing gathering like we had in 1904, during the St. Louis Exposition. Bring your wife and daughters. St. Louis will try to make it pleasant for all. There will be rooms in the hall for exhibits, if any manufacturers or beekeepers wish to show, or adjoining rooms can be had, if desired.

ROBT. A. HOLEKAMP,
Pres. St. Louis Beekeepers' Club.

PRELIMINARY PROGRAM.

A number of vital and important problems confront the association for action. Every affiliated society should, if possible, be represented by a delegate; otherwise send communications and instructions to the secretary.

The program following is preliminary and is subject to change. An effort has been made, however, to secure the very best talent available in this country and abroad:

TUESDAY, FEBRUARY, 17.

9:30 A.M.– Opening session. Seating of official delegates Appointment of committees as well as routine business will be prosecuted in due form.

"Suggestions for the Betterment of the 'National'"—Editor E. D. Townsend. Northstar, Mich.

1:00 P.M.—Session for discussions. Since the program is constantly growing, final arrangements are not yet possible. The papers offered are therefore grouped and listed below.

7:00 P.M.—Business session.

8:00 P.M.—Lectures with the lantern.

WEDNESDAY, FEBRUARY, 18.

9:00 A.M.—Business session, with papers as time will permit.

1.30 P.M.—Short business session.

2:00 P M —Discussions and papers.

7:00 P M.—Business session.

8:00 P M.—Lectures.

THURSDAY, FEBRUARY 19.

9:00 A.M.—Business session, followed by as many papers as may prove possible.

2:00 P M —Closing session. Final adjournment is subject to the business program.

PROGRAM OF PAPERS AND CONTRIBUTIONS SUBJECT TO ARRANGEMENT—APICULTURAL EDUCATION AND PROMOTION.

"The Question of Apicultural Education"—Prof. Morley Pettit, Guelph, Ont.

"Developing the Industry"—Mr. Frank C. Pellett, Atlantic, Iowa.

"Modern Business Methods Applied to Beekeeping"—Mr. F. B. Cavanagh, Hebron, Ind.

"Organization of the Beekeepers"—Mr. Jenner E. Morse, Saginaw, Mich.

THE QUEEN BUSINESS.

"Direct Introduction of Queens"—Mr. J. M. Buchanan, Franklin, Tenn.

"Selective Breeding"—Mr. Geo. B. Howe, Black River, N. Y.

BEEKEEPING BY LOCALITIES.

"New Jersey Beekeeping"—Prof. T. J. Headlee, New Brunswich, N. J.

"Honey Resources of New Jersey"—Mr. E. G Carr, New Egypt, N. J.

"California Beekeeping—Up and Down to Date"—Mr. J. D. Bixby, Covina, Calif.

"Beekeeping in Southern California"—Mr. Homer Mathewson, Binghamton, N. Y.

"History of Beekeeping in California"—Mr. J. E. Pleasants, Orange, Calif.

"Development of Apiculture in Oregon"—Prof. H. F. Wilson, Corvallis, Oreg.

"Beekeeping in Europe"—Mr. C. P. Dadant, Hamilton, Ill.

"Making a Market for 500 Cars of Western Honey"—Mr. Wesley Foster, Boulder, Colo.

WINTERING.

"Building the Perfect Bee Cellar"—Mr. E. S. Miller, Valparaiso, Ind.

"Humidity in the Wintering of Bees"—Dr. E. F. Phillips, Washington, D. C.

SPECIAL AND GENERAL SUBJECTS.

"Restoring the Soil Fertility and Producing Honey"—Dr. H. A. Surface, Harrisburg, Pa.

"The Secretion of Nectar"—Dr. F. W. L. Sladen, Ottawa, Canada.

Subject to be announced—Mr. J. J. Anderson, Salem, Idaho.

"Moving Bees from the North to the South for Increase"—Mr. E. R. Root, Medina, Ohio.

"Beekeeping as a Money Making Proposition"—J. J. Wilder, Cordele, Ga.

Subject to be announced—Prof. Wilmon Newell, College Station, Tex.

"Automatic Recording Instrument"—Prof. C. E. Sanborn, Stillwater, Okla.

The sessions are open to the public. Business sessions, however, are participated in by delegates.

BURTON N. GATES, *Chairman.*
Amherst, Mass., Jan. 15.

* * *

Iowa State Beekeepers' Convention

The Iowa State Beekeepers' Association met at the Savery Hotel in Des Moines on Dec. 10, 11 and 12. The parlor which was placed at the disposal of the association, proved hardly sufficient. So large was the attendance at some of the sessions that even the door was obstructed, and the officers contemplated securing larger quarters. We can give but an abridged report of the meeting, which could fill an entire number of the American Bee Journal.

The address of the President, Frank C. Pellett, called attention to the fact that Iowa is one of the best honey-producing States, outranking Colorado, and that it may some day rank first.

Second Annual Convention of Iowa Bee Keepers Ass'n, December 10-12, 1913

1 J W Stine, Salem, Iowa
2 Mrs J C Davis, Russell, Iowa
3 J C Davis, Russell, Iowa
4 Dr A. F Bonney, Buck Grove, Iowa
5 C H True, Edgewood, Iowa
6 S W Snyder, Center Point, Iowa Sec
7 J W Stein, Salem, Iowa
8 Frank Pellett, Atlantic, Iowa
11 H B Miller, Marshalltown, Iowa
12 R. E Ostrus, Des Moines, Iowa
14 C P Dadant, Hamilton, Ill
15 E. C Wheeler, Marshalltown, Iowa
16 H H Root
17 D K Brown, Norwalk, Iowa
18 E W Townsend, Ft Dodge, Iowa
20 A. P Chamberlin, Des Moines, Iowa
21 F O Hinkson
23 F C Scranton
24 Dr Allen, Grant City, Mo
25 N Hall, Colo Iowa
26 Mrs F W Hall, Colo, Iowa
27 Mrs N J Harris, Des Moines, Iowa
28 A B Shideler, Van Meter, Iowa
31 Mrs A B. Shideler, Van Meter, Iowa
Baby Dorris
32 Mrs R H. Longworth, Polk, Iowa
33 A. D Kuersten, Burlington, Iowa
34 J H Meloy Ft. Dodge, Iowa
35 A C Reinhart, Ogden Iowa
36 Dr J W Caldwell, Steamboat Rock Iowa
37 W H Pearson, Mitchellville, Iowa
38 F W Hall Colo, Iowa
39 John Fairburn, Whittemore, Iowa
40 Charley Lotz Monroe, Iowa
41 W H Campbell, Grant City Iowa
42 O Ostrus, Wiota, Iowa
43 J C Donahue Holbrook, Iowa
44 J H Schwers, Valley Jct., Iowa
45 J O Kramer, Hospers, Iowa
46 E. G. Brown, Sergeant Bluff, Iowa
47 I N Winslow, Madrid, Iowa
48 J L. Strong, Clarinda, Iowa
49 M D Johnson, Webster, Iowa
50 Dr. E. C Lynn, Marshalltown, Iowa
51 W. H. Winch, Hopkinton, Iowa
52 W S. Pangburn, Center Jct., Iowa
53 J J Willis, Arlington, Iowa
54 W. Cortwright, Steamboat Rock, Iowa
56 Floverdale, Delmar, Iowa
57 A. Wright, Des Moines, Iowa
58 C. E. Dustman, Des Moines, Iowa
60 B. A. Brown
62 R M. Surlser,
63 B. H. Tripp, Brooklyn, Iowa
64 Prof. C E. Bartholomew
65 L. W. Elmore, Fairfield, Iowa
66 C P McKinnon, Des Moines, Iowa
67 Durrie Shideler, Van Meter, Iowa
70 T W Blackman, Nevada, Iowa
71 W W. Lester, Glidden, Iowa
72 H L Rouse, New Hampton, Iowa
73 J C Stocks, Grinnell, Iowa
74 W. H Milligan, Cedar Rapids, Iowa
75 F Briggs
77 J W Schlenker,
78 A D. Claney, Nevada, Iowa

Members in Attendance at the Michigan State Beekeepers' Convention, Dec. 10 and 11, 1913

1. J. W. Graham
2. —— ——
3. —— ——
4. D. Siver
5. C. F. Foot
6. W. S. Adkins
7. C. H. Abbott
8. A. G. Woodman
9. W. L. Cheney
10. —— ——
11. —— ——
12. Mr. Offineer
13. —— ——
14. Frank Murray
15. —— ——
16. A. W. Smith
17. L. C. Dadant
18. O. H. Schmidt
19. C. W. Klump
20. —— ——
21. Jenner E Morse
22. —— ——
23. Joseph A. Pearce
24. —— ——
25. E. D. Townsend
26. Mrs. Pease
27. Roy K. Munson
28. Floyd Markham
29. Prof. Morley Pettit
30. Miss Pettit
31. C. W. Reiber
32. Prof. F. C. Millen
33. —— ——
34. Levi C. Greenfield
35. E M. Hunt
36. A. H. Guernsey
37. —— ——
38. Prof. R. N. Pettit
39. Leonard S. Griggs
40. David Running
41. Mr Ewell
42. G. Frank Pease
43. E. E. Townsend

He called attention to the securing of an inspection law and better premiums at the fair, the past year. He advocated a better system of crop distribution, and avoiding the use of anything but new containers for honey. He urged co-operation in honey sales, increased education in beekeeping, and the publishing of crop reports.

Our venerable friend and active worker, Eugene Secor, of Forest City, delivered a very interesting address on "How We May Increase the Consumption of Honey." He called attention to the fact that only about a pound of honey per capita is consumed in the United States, while there is a consumption of 172 pounds of meat and some 70 pounds of sugar. His conclusion was that honey should be more largely advertised and more largely produced.

Mr. J. W. Jarnagin spoke of bee-culture as one of the side-lines on the farm, and mentioned the usefulness of the bee in fertilizing plants. He quoted Mr. Gill, one of the largest producers in the West, in testimony of the fact that the farmers of the irrigated regions are glad to secure apiaries on their land to fertilize the blossoms of both their fruit and their field crops. The discussions following this address brought out the fact that some Iowa orchardists have offered inducements to beekeepers to place apiaries within their orchards.

An essay of J. L. Strong, on selling honey directly to the consumer was very interesting. Mr. Strong is one of the oldest beekeepers in America, having been a practical apiarist ever since the honey extractor was invented. He told of his early experiences and of the difficulty of selling fine extracted honey when the consumers were used only to the strained honey of bee-hunters and box-hive beekeepers. Pure clover honey was then very much mistrusted. The discussion which followed brought about a mention of the harm done to the beekeeping interests by the endless repetition of the fake story of manufactured comb honey, which is still believed by tens of thousands in spite of its utter impossibility.

A number of officials from the State College at Ames were present, and urged that a meeting of the association be held in that city. Mr. Bartholomew stated that the college was to institute a short course in bee-culture, with about 30 lectures and some practical work. A committee was appointed to take steps to secure some permanent establishment of this kind and an experimental apiary at the college. It was finally decided by vote to hold the next annual meeting at Ames, and sectional meetings and beekeepers' picnics in different places during the summer.

The election of officers which took place on the second day resulted in the re-election of the same men: President, Frank C. Pellett; Secretary, S. W. Snyder; Treasurer, C. H. True. Surely, no better men could be secured. To the efforts and good management of these officers is certainly due a portion of the success which attended the meeting.

The president was selected to represent the association at the meeting of the National in February.

A very important paper was read, on sweet clover, by Mr. Coverdale, and the discussion that followed brought out a number of useful points. It appears that the farmers of the country have entirely changed in their attitude towards this honey-plant, and instead of considering it as a noxious weed, are now growing it as a forage-plant, and also to reclaim abandoned and worthless land, upon which Mr. Coverdale assured that it grows to a height of 5 feet. This apiarist grows the sweet clover for hay. He cuts it in October of the first year and secures quite a crop from this first harvest. In the second year he cuts it as soon as it reaches a height of 23 to 24 inches, taking care not to mow it too low, leaving a joint or two of the stem above the ground. If cut too low or too late it is often killed. In about a month from the first cutting it is again ready to cut, unless wanted for seed. When sowing it for the first time, the ground in which it is to be grown may be inoculated with the bacteria by simply soaking the seed in a liquid made of common glue diluted with finely powdered dirt shaken from the roots of old sweet-clover plants. The seed is spread upon a floor, and the mixture poured upon it, and it is shoveled over until every seed has a light coat of this mixture. It takes only a few gallons of the mixture to inoculate a large quantity of seed. About 20 pounds of seed is used to the acre. When the clover is cut for its seed, they use an ordinary binder machine. There is a great demand everywhere for the sweet clover at present.

A member having stated that his stock would not eat sweet clover, and having asked how he could induce them to eat it, a dozen or more protested that cattle, as well as horses, could be induced to eat it very readily, by simply feeding nothing else to them and that they soon learn to prefer it to other fodder. But care should be taken to harvest it at the proper time.

Interesting papers were given by Mr. True, Hamlin B. Miller, Dr. Bonney, W. P. Southworth, B. A. Aldrich, J. W. Bittenbender, E. G. Brown J. W. Stine, Prof. Kennedy, of Ames, and others.

Mr. Huber Root, who came in lieu of his brother E. R., detained at home by sickness, gave a history of the methods for extracting honey and a display of the most modern implements. He estimated that the honey crop of the United States was around 200,000,000 pounds, about 150,000,000 of which is extracted honey. He deprecated the use of the capping-melter for outyards, as it gives considerable trouble to get it ready, and often damages the honey in heating. He recommended the use of power to run the honey extractor.

Mr. E. G. Brown, in his talk on the cure of foul brood, gave a variation of the McEvoy method, devised by the well-known apiarist, Thomas Chantry, who now resides in Utah. It consists in hiving the bees upon strips of foundation and one dry comb. It is held that the bees at once desposit the honey which they hold in their sacs into that dry comb. This being removed promptly, there is no necessity of again transferring the bees. As this is a short method, it is worthy of trial, especially where the disease is of mild nature.

It is impossible to give in this short report more than a glimpse of some of the valuable things we heard. We leave out many good points. The beekeepers of Iowa have much to gain from these meetings, and we bespeak for the Ames convention a very great success. We will give due notice of it in these columns a month or so ahead of time.—The Editor.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

A Little Discouraged

MR. WILDER:—I see that you have secured a big crop of honey. My honey crop for the last two seasons has been a complete failure. Surrounding beekeepers have also failed. I tried to produce honey in sections last season and failed and I tried to produce chunk honey in shallow frames and failed. I used full sheets of foundation and the supers at the close of the season were about as clear of honey as when I put them on. We had very little swarming but our bees were very strong and we only have 60 or 70 colonies in this location. Our honey plants are fruit and poplar trees and blackberry in the spring and cotton during summer. This may be a poor location but it is as good as there is within fifty miles.

If this section is not good for bees I don't want to continue, and if I'm not right I want to get right. If you can suggest anything that would help me I will appreciate it.

Starr, S. C. S. A. Hall.

ANSWER:—I am almost at a loss to suggest anything in your case. If bees have done well in your section up to two years ago you have evidently been up against a failure of nectar owing to weather conditions. Such is very often the case. You have some good honey plants and your location has hardly run out so far as a bee pasture is concerned. As early as possible in the spring I would put in some of both Caucasian and Italian queens and note results. This is not bad policy in good locations, and it is even better in poor ones. There are many locations in the south where bees will not enter supers very much if they are kept in ten-frame hives. This may be your case. I have bees in almost all kind of locations and in fifty-one yards and I don't know that I have even one location where I could use a ten-frame hive. Many small beekeepers scattered near my yards use ten-frame hives and make but little honey, some of them not enough for table use except when they take it from the brood nest.

◆

Wants a Location

DEAR MR. WILDER:—I want to keep in touch with beekeeping for I am strongly thinking of laying aside all other business and going into beekeeping. Do you know of a good unoccupied locality?

Monetta, S. C. J. O. HALLMAN.

ANSWER:—If you will refer back a few numbers of the American Bee Journal you will find that I give this information. It should be just what you want; namely, beekeeping in the Blue Ridge Mountains of northern Georgia and North Carolina for those who desire high attitude and in southeast Georgia for those who desire a lower level. Should you come to the latter you will have good transportation facilities both by rail and boat to northern markets. After looking over the section well you can best decide on a location for youself.

◆

Congratulations

Many congratulations have come in on the crop of honey I made the last season. It was a lot of honey all told but when we take into consideration the number of apiaries and colonies it was not a large average per colony a little less than 60 pounds. But that is good for our location.

◆

Be Ready, Is My New Year's Wish

The busy season is just ahead. We are fast approaching it. Are you ready, anxiously waiting to see how well you can care for it, whether it be small or large? If not, line up at once and by all means be ready. Don't neglect the business, it is not sound logic or economy to do so. Buy two supers where you only bought one for each colony last year. Use full sheets of foundation where you only used starters. Be sure you have plenty of new hives for increase. My new year wish is "Be ready and anxious."

CONTRIBUTED ARTICLES~

The Interstate and Washington State Fairs

BY GEORGE W. YORK.

IT was my privilege to judge the exhibits in the bee and honey department of the Spokane Interstate Fair, held in Spokane, Wash., beginning Sept. 15, 1913, and also the Washington State Fair, held at North Yakima, Wash., beginning Sept. 30, 1913 A good view of the apiarian exhibit at the first-named fair is shown herewith. Unfortunately no views were taken of the fair at North Yakima, owing to a failure to secure good views the preceding year, so no attempt was made this year, although I had expected that pictures would be taken and forwarded to me.

I will here speak of the Interstate Fair, as that was held first, the superintendent of the apiary department being Mr. L. C. Barrett, who is a good man for the place.

THE INTERSTATE FAIR.

Had it not been for the efforts of Mr. J. P. Kingsland, of Spokane, one of the liveliest bee-men in all the northwest, there probably would have been but a very small exhibit, if any, in the beekeeping line at the Interstate Fair. As it was, it was not up to the display made at the fair of 1912, but all the exhibits this year were very good, so they made up in quality what perhaps they lacked in quantity.

Prizes were distributed among the following winners: J. P. Kingsland, Mrs. M. E. Baker, John F. Sprague, Mrs. F. P. Dodge, and Miss Fannie Brake.

The total cash offered in prizes was a little less than $200.

It is hoped that another year an effort will be made to get together a larger exhibit and more exhibitors in the bee and honey department of the Interstate Fair, for this is really one of the great fairs of the United States, as it includes Washington, Oregon and Idaho.

THE WASHINGTON STATE FAIR.

The exhibits in the bee and honey building of this fair covered a wall and counter space of perhaps 100 feet in length. They were located in what had been used before for both apiary and dairy products, but the dairy end of the narrow and somewhat L-shaped building was practically empty.

The beekeepers in the locality of North Yakima (which is also one of the most famous apple regions in the world) are wide awake, and know how to get up a good display. Mr. C. A. Beardsley was the superintendent of the apiary department, and put in about two months of hard work preceding the fair dates. To him belongs a large portion of the credit for the fine success of the apiarian displays.

Among the exhibitors were several beekeepers who are well known to the fraternity as very successful producers of honey. I might name J. B. Ramage, the hustling secretary of the Washington State Beekeepers' Association; Robert Cissna and Virgil Sires, also members of the organization. Messrs. Cissna and Sires have between them about 1000 colonies of bees.

I must not fail to mention the good women who added much to the interest and value of the apiarian display at this fair. I don't think I ever saw so great a variety of eatables made with honey as a component part. It was almost necessary to have an assistant to the judge to help taste all the good things in pastry and honey candies that the women had made, and all of which were entered for prizes.

The total cash premiums at this fair were around $300.

I want to emphasize particularly the great variety of most tempting honey

Apiarian exhhibits at the Spokane Wash.) Interstate Fair.

cakes, honey candies, honey-canned fruit, etc., that the women had entered at the Washington State Fair. They surely attracted much attention, and will help to show other women just what can be done with honey in the kitchen. Why, I can almost taste yet the many delicious things that were made with honey, and which it was my duty (as well as pleasure) to sample at this particular fair. It is one of the best ways possible to increase the use of honey in baking and preserving.

I wish also to mention the several most excellent displays of mounted nectar-yielding plants. As I recall it, one exhibitor had over 100 different specimens. They were very attractive.

The more I attend fairs and come in close contact with the apiarian exhibits, the more I am convinced that many beekeepers are neglecting a splendid opportunity to advertise the products of the apiary when they fail to take advantage of the chance to show large numbers of people the value of honey through exhibits at fairs. Also, every exhibitor of honey, bees, etc., should have a small leaflet to hand out to visitors, showing various ways in which honey can be used, and also bearing the name and address of the exhibitor, so that the recipient may order in case honey or further information is desired.

From the various fairs that I have attended in widely scattered parts of our great country during the past 20 years, and also from the excellent apiarian displays I have seen at these fairs—from Toronto on the north to San Antonio on the south, and from Buffalo on the east to North Yakima on the west—I am led to conclude that almost everywhere is a good location for beekeeping. All it needs is the right kind of beekeepers to go in and possess the land with its nectar already there awaiting the bees to gather it.

Sandpoint, Idaho.

Let Us Not Exaggerate

BY J. CREPIEUX-JAMIN.

WE read from time to time, in the bee-papers, that a friend of the honey-bee has died at a very advanced age, and that the secret of his longevity was to take a spoonful of honey every morning. It is so simple that one is astonished to hear of any beekeepers dying at middle age; evidently they must be vicious people.

This idea of the extraordinary power of honey is so deeply anchored in the mind of many beekeepers that I do not approach this subject without apprehension. I have gathered together circulars and articles extolling the virtue of honey. The collection is under my eyes; I see in looking it over that it will be difficult to convince some people, and I would not like to displease them. Truly, honey is an aliment so rich and so delicious that by its unquestionable qualities it deserves to be placed in the front rank of edible products; but it is needless to claim for it universal qualities against disease or even death.

"The daily use of honey is a brevet of long life." "Eat honey daily and you will never be sick." "Honey protects the health and cures disease." "Honey as food, and not as medicine, eases digestion, strengthens the bronchial tubes and preserves persons from gastritis, enteritis, colds, bronchitis," etc.!

We find almost everywhere in apiarian literature the assertion that honey is a sovereign remedy in throat troubles. If they said that it is "useful" they would be nearer the truth. When we speak of throat troubles, colds, bronchitis, etc., we give too general enumerations. One speaks thus of the diseases of the respiratory organs when one does not know them. It is thus that they were mentioned some 60 years ago, before the discovery of microbiology. But now we make a distinction between the different bacilli, and we also distinguish specific bronchial troubles produced by the special germs of diseases of which they are a symptom, bronchitis caused by grippe, measles, whooping-cough, tuberculosis, etc., as well as the non-specific bronchial troubles caused by the common microbes of inflammation. And as to the throat itself, it is the seat of numerous diseases, which differ greatly in their form and their origin. The pharynx may be suffering in one or another of its parts, tonsils, palate, whence are produced the divers quinsies and amygdalitis.

In view of the complexity of causes and effects, the use of honey as a preservative or a remedy appears insignificant; very unwary is he who counts upon its decisive action. Honey is a first-class food, but a medicine of low value; it is sometimes softening and laxative, but that is small value towards a cure and far from a cure-all. I do not see the need of diminishing the legitimate interest in honey by attributing to it qualities which it does not possess. The result is to cause a shrug of the shoulders by every man who is informed on medical subjects.

This little weakness of exaggeration is not confined to the beekeeping world. We read not long ago of an American lady who draws the attention of the world because she possesses a number of millions, and who is said to preserve her health in old age by eating onions every day. In Provence and Algeria they prefer garlic for many reasons; garlic is stimulating, diuretic, and a vermifuge. An athlete preserved his strength by eating nuts. Others praise sugar. Truly, honey is better, and for good reasons. But here comes a centenarian who gives his secret: Drink a glass of water every morning when getting up. It was disgusting to be informed by the centenarian of Darnetal, that a glass of brandy, from time to time, in the morning, is not injurious. Happily for common sense and good examples, the majority of centenarians, when interrogated, declare that sobriety and abstinence from alcohol have been most useful to them in maintaining their health.

There are also centenarians who owe their long life to the observance of 10 to 15 precepts. Upon examination, we acknowledge their correctness; they praise hygiene, peaceableness, regularity, wisdom in every form. They are well, not because of a single alimentary habit, but because of several good habits, moral as well as physical.—*Translated from L'Apiculture Nouvelle.*

Economical Bee-Hive Construction and Manipulation

BY J. E. HAND.

DURING the past few years I have devoted my best energies to simplify methods, and minimize labor by the development of principles, and methods for the prevention of swarming by rendering conditions unfavorable to the development of the swarming impulse. Manipulation is but another name for labor, and while we may by excessive manipulation discourage swarming, the chances are even that we have also discouraged honey production by placing the colony so far from a normal condition as to render it practically unproductive during an ordinary clover harvest. Viewing it thus, it is neither desirable nor profitable to prevent swarming unless it can be accomplished spontaneously. My labor has not been wholly in vain, especially since my investigations have led me into broader fields of observation and research along the line of economical bee-hive construction and manipulation; and I believe, to the discovery of principles for the spontaneous prevention of swarming, as well as for minimizing expense for equipment.

LARGE BROOD-CHAMBERS.

In touching upon this important subject I do not wish to convey the idea that some particular form of hive will give vastly superior results in honey production, but rather to show wherein a properly proportioned general purpose hive is best suited to the needs of the masses, when viewed from the standpoint of economy and utility, the two essential points of bee-hive construction and manipulation. Since the Langstroth frame has stood the test of time until it has become the standard for America, there is little room for improvement here, and the only question that remains is how many frames shall we use in a hive? The correct answer to this question will determine the proper size of hives, concerning which there is still a wide diversity of opinion. The tendency is toward large brood-chambers; the 8-frame size has few advocates, and the 10-frame size is being discarded for something larger. This movement is not a mushroom growth, but it is the result of a gradual development actuated by stern necessity, and based on sound principles of economy and general utility.

Since it is generally conceded that horizontal contraction and expansion of the brood-chamber is the correct principle, it should be of sufficient capacity to develop the fertility of the most prolific queens; for no one who would consult his financial interests can afford to curtail brood-rearing in a cramped brood-chamber. Viewing it thus, it is evident that the 10-frame hive is out of proportion, as well as entirely too small for best results as a general purpose hive. It is infinitely more desirable to have room in the brood-chamber for a few combs of honey, than to curtail brood-rearing, or to have the queen encroach upon the domains of the surplus receptacles with its disagreeable results of floating larvæ and spoiled extracting combs. If queen-excluders are used, the working force is diminished just in proportion to the amount of brood that would have been reared in a hive of sufficient capacity, and swarming will be the ultimate result.

Again, if a story and a half are occupied for brood, at least two more are needed for surplus, making the hive four stories high, a regular sky scraper, entirely out of proportion, as well as devoid of all principles of domestic economy; since the field laborers are compelled to travel nearly 4 feet upon the vertical sides of hives before they can deposit their heavy burden; a condition of fruitless labor and wasted energy to the bees.

It is evident that a hive of 17-frame capacity is not too large for best results when viewed from the standpoint of economy and utility. We have adopted this form of hive in preference to any other for reasons already given, as well as for the additional reason that it is the embodiment of methods for the application of principles of far greater value to beekeepers than any we have mentioned; not the least of which is its economical solution of the wintering problem, including the minimizing of expense for wintering equipment. The winter of 1911-12 proved quite conclusively that the problem is still with us, and fortunate indeed is the beekeeper whose hives are so constructed as to afford ample and perfect winter protection without a cent to pay for extra equipment. It simply means life and prosperity to the bees, and dollars in the pockets of beekeepers, that would otherwise go for expensive and cumbersome chaff hives and winter cases.

This hive is so proportioned that when the frames are removed it will take in an 8-frame hive-body crossways, and leave 2 inches of space between the walls of the two hives for winter packing; and when the top story is on we have 10 inches of space for packing on top without the expense of a deep cover or chaff tray, thus affording better winter protection than the most elaborate and expensive chaff hive, and without extra equipment save the inner case which can be made from a packing box for 10 cents; this is 12 inches deep in order to draw the cluster upward in the center of the packing chamber and away from the drafty entrance, and leave a space of 3 inches under the frames—a very desirable feature not found in any other wintering hive.

An 8-frame space is large enough for winter, especially since the more crowded they are the warmer they will be, but the combs should be pretty well filled with stores at the beginning of winter. Since the hive is converted from a single-wall hive for summer use to a double-wall wintering hive, affording ample winter protection without extra equipment, it is appropriate to bestow upon it the cognomen "of "the convertible hive."

When we consider that it costs less to construct a hive of this pattern than ordinary hives of equal capacity, without wintering privileges, little more is needed to complete the principle of "economical construction and manipulation of hives." It is 20x26 inches outside, and will accommodate 16 frames and a sliding follower, and when the top story is on it approaches closely to the cubical form, and presents a very substantial and symmetrical appearance. It is used with stationary bottom and shallow telescope cover over a thin super cover in two pieces. Since it is used with an upper story, it should not be confounded with the so-called "long idea" hive, which is a single story hive; the principle is original with myself, as the result of a gradual development covering a period of several years, and it is not an unproven theory.

While this is virtually an extracted-honey hive, all that is required to make it a section-honey hive is a set of old-style double-tier section frames having woven wire separators on both sides, and alternating with clean white extracting combs, thus producing both kinds of honey with no swarming, and no expensive paraphernalia, such as supers, fences, etc., to consume the beekeeper's time and cash, and every hive is ready to produce either comb or extracted honey, or both, without extra equipment except frames. Those who have practiced this method will attest to its economy and utility. If the foundation is revamped by painting the surface with warm (not hot) melted wax, before cutting it up, the bees will accept it more readily, which is an important factor in the spontaneous prevention of swarming.

The extra expense for chaff hives and winter cases will go far toward stocking an apiary with convertible hives and eliminate the winter case which consumes the beekeeper's time and cash, and lies idle six months of the year. This principle is wholly subservient to the interests of beekeepers by minimizing expense for equipment. Frequent changes and modifications are imperative in order to keep in touch with an era of progress and improvement.

An expensive dovetailed corner adds nothing to the value of a hive and much to its cost. Two square joints properly nailed together will hold as long as the timber lasts, and keep the inside drier than will a locked corner. An active mill man will cut out a lot of hives in a short time at 50 cents per hour, and get frames of the supply dealer. I claim for this hive: 1st, a brood-chamber of a capacity to develop the fertility of queens sufficiently to check the swarming impulse, and bring the colony on the stage of action with the strongest force of bees possible; 2d, spontaneous prevention of swarming; 3d, a single wall hive in summer, and a double-wall hive in winter, affording ample winter protection without extra equipment; 4th, horizontal expansion and contraction by means of a sliding follower; 5th, a cubical form closely surrounding the brood with extracting combs, economizing time and energy of bees; 6th, it necessitates handling the wintering combs thereby eliminating the loose practice of guessing at internal conditions; 7th, its advent will mark the beginning of a new era in bee-hive methods, and sound the death knell of expensive paraphernalia for wintering bees and producing section honey.

Birmingham, Ohio.

[Mr. Hand favors a brood-chamber of 17 frames. We are glad to see it, even though we think such a hive too large. It is only a short time since Mr. Hand deprecated the use of large hives and wrote, American Bee Journal for 1909, page 240: "The 8-frame Langstroth hive must ever remain what it is—a general utility hive—the hive that is best suited for the masses."

Years and years ago, from 1868 to 1880, Mr. Chas. Dadant experimented upon hives of different sizes, both in number and size of frames; not in reduced number of colonies, but in large apiaries, so that there could be no mistake in the results. For years afterwards he fought alone in the bee-journals in favor of hives "of sufficient capacity to develop the fertility of the most prolific queens," to use the words of Mr. Hand. In 1908, page 141 of the American Bee Journal, Mr. Getaz quoted Chas. Dadant as saying, 15 years before: "We are now alone in advocating a brood-chamber larger than 10 Langstroth frames, but we are in the right, and the time will come when our position will be vindicated." What we saw in Europe during the past summer and Mr. Hand's article prove it has been vindicated.—Editor.]

Cumarin and the Bitter Principle of Sweet Clover

BY A. F. BONNEY.

THE most common contention of the average ruralist whose front yard may be rank with "plants out of place," is that sweet clover with or without a hyphen "is a weed." The next, when driven into an argumentative corner, "Well, cattle will not eat it, anyway."

There is a state of transition, generally very brief, between hate and love on the part of the average farmer. All that seems to be required is leadership. That we, in this vicinity, are in the chrysalis stage is evident, for sweet clover is now being discussed as a hay and forage plant, and the writer has not for weeks been threatened with arrest for sowing sweet clover seed.

Just before leaving for the East in the spring of 1912, Mr. W. L. Morton, of the Chicago, Milwaukee & St. Paul railroad, and I found two stalks of sweet clover which had neither the smell of cumarin nor the bitter taste characteristic of the plant. At that time Mr. J. M. Westlake, Agronomist in Charge of Clover Investigations at

Washington, D. C., was searching enthusiastically for such a strain, and I at once communicated with him. However, the plants died from transplanting, and that was the last of the matter until now.

At our State meeting in Des Moines, in December, 1913, I met Mr. Frank Coverdale, of Delmar, Iowa, who is day in and out preaching the gospel of sweet clover, and chancing to mention the matter of the loss of the bitterless plant, I was surprised to find that it is believed that this "bitter principle" in sweet clover is what prevents "bloat" or acute fermentative indigestion in cattle, as they can gorge themselves with the sweet clover with impunity, while over-indulgence in the white, "Dutch" will cause disaster. He also stated that this "bitter principle" and cumarin, or the odoriferous principle of sweet clover, were identical. I was not ready to assent to this, as our commercial source of cumarin is the tonka bean, in which it exists in liberal quantities.

The tonka bean is used as a substitute or adulterant for vanilla, as it is stronger and much cheaper. It is used in our kitchen in preference to the pure vanilla. Mind, the *tonka bean* is used, and not the cumarin extracted from it, which justifies me in saying that cumarin is not bitter, as that is the flavoring element. Moreover, a couple of years ago I extracted an appreciable amount of cumarin from sweet clover, and do not remember that it was bitter.

Mr. Westgate, writing regarding the bitter principle, says under date of Dec. 18, 1913: "For some reason sweet clover does not bloat cattle. It has been suggested that it is due to the 'bitter principle.' I am not sure that this 'bitter principle' is the cumarin we have thought it to be, but we hope by another year to have some definite tests made to determine this matter. In a talk I had some time ago with one of the physiological chemists, I was given to understand that it was *almost impossible to have the cumarin remain as such in the different stages of sweet-clover curing.*" (The italics are mine.)

I think I have good grounds for doubting that the "bitter principle" and cumarin are identical, and I make bold to assert that the proposition that the "bitter principle" is the cause of immunity from bloat is only an intelligent guess. Cattle do not bloat from eating cured white clover, but the green. Why is it that the cumarin in the sweet clover is not the prophylactic element? Or perhaps that and the "bitter principle" combined. Why either? So far as I know the "bitter principle" has never yet been isolated, consequently no physiological tests can be made with it, and none have been made with cumarin. Again, it may be that not one-tenth of one percent as many cattle eat sweet clover as white, and yet it may be possible that the sweet clover is not so absolutely harmless as we assume while we wish to prove it so; for the sooner sweet clover takes the place of white the better it will be for bee men, and possibly farmers who should be bee-keepers.

"Cumarin is a vegetable proximate principle ($C_9H_6O_2$) obtained from the tonka bean, and also occurring in melilot and other plants. It has been used in medicine, and gives flavor to the Swiss cheese, called *schabzieger*." It is also spelled coumarin and coumarine. *Liatris spicata*, commonly called gay-feather, devil's-bit, colic-root and button-snake root, contains cumarin, has been used in medicine, and is still used in the South to flavor tobacco. Sweet clover would be better. The United States Dispensatory is authority for the statement that "Melilot is practically inert;" as a medical agent it means. "It contains *coumarin*, $C_9H_6O_2$, the chief constituent of tonka beans, combined with *melilotic acid* and coumaric acid, of which the coumarin is the anhydride." The Dispensatory uses no hyphen in spelling the name sweet clover.

In the spring I purpose to find what this "bitter principle" is.

Buck Grove, Iowa.

[We have often wondered whether there were not different degrees of bitterness in sweet clover, depending upon the soil in which it grows. We have never had any difficulty in getting either cattle or horses to eat it, even when the stalks are very large.—EDITOR.]

Flour in Place of Pollen in the Hive

BY JAMES W. WILSEY.

WHEN I examined my bees last March, there were signs that there had been considerable brood-rearing during the winter, but there was no unsealed brood and very little pollen left in the hives. It was plain that the bees were in need of pollen, and I wondered if a substitute for it placed in the hive would be of any use.

In order to try this, I laid an empty comb flat upon the table, and on this comb I placed a scoopful of ordinary wheat flour and worked it back and forth with a post card until all the cells were filled. I then rubbed my fingers over the surface of the comb to pack the flour down so that it would not fall out when the comb was placed in an upright position.

This comb of flour I placed in one of my hives at the side, as far away from the bees as I could get it, in order to examine it without disturbing the bees, as the weather was cold. On examining the hive the next morning it was apparent that the bees had been using the flour. Brood-rearing on a large scale immediately started in this colony. I then placed similar frames of flour in the other hives with the same general result, and two weeks later, with the exception of one hive, there were from three to six frames of capped brood in these colonies.

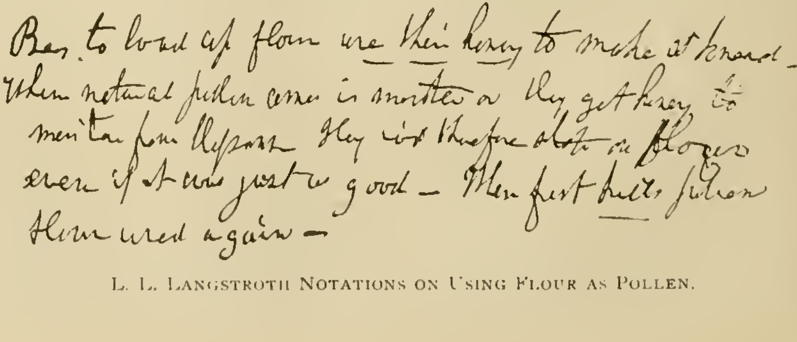
The hive which failed to respond to this treatment had more honey than any other, and it also failed to start up brood-rearing when natural pollen was coming in freely; brood-rearing did not commence in this colony until honey was coming in from cherry and hard maple trees. The frames of flour also had a tendency to keep the bees in the hives on cold and blustering days, for on one such day, when none of my bees were working, I visited a neighbor and found the bees of one of his colonies working strongly, bringing in pollen, and on opening my hives I found many bees at work on the frames of flour. Even on fine sunshiny days in April, when pollen was plentifully supplied by the flowers, many of of my bees preferred to stay at home and work on the frames of flour. But when real warm weather came in May the frames of flour were abandoned.

We have all observed that when much brood-rearing is going on, the floors of the hives become covered with yellowish or brownish particles, many of which the bees remove to the alighting-board. After the bees commenced using the flour for brood-rearing, the floors of the hives became covered with little white particles, and those which the bees removed to the alighting-board were also white.

New Platz, N. Y.

[The use of flour as a substitute for pollen dates back several hundred years, but it is rediscovered every year by some one. We give place to the above because Mr. Wilsey uses it inside of the hive instead of feeding it outside. Our method is to place it in low flat boxes, in a sheltered spot, pressing it with the hands into little mounds, so that the bees will not smother in it. We tried placing it in the combs, but the difficulty lies in knowing how much or how little to give. Colonies take it in varied amounts, and usually stop using it as soon as blossoms appear. Although the placing of it in the hive saves them some trips, the most damaging losses of bees in cool weather are mainly due to the hunt after water.

We have in our possession a number of manuscript notes from Father Langstroth, and we find the following written in 1859, touching upon this subject:



Bees to load up flour use their honey to make it knead—
When natural pollen comes in moister or they get honey to
moisten for the pollen they are therefore slow on flour
even if it was just as good — When first bells, pollen
Flour used again —

L. L. LANGSTROTH NOTATIONS ON USING FLOUR AS POLLEN.

This was evidently hurriedly written. The first subscriber giving us the correct reading of these lines will be given a year's subscription to the American Bee Journal.

A little history of the early use of this artificial pollen may be of interest. Hartlieb, a German, as early as 1655, noticed that bees would take flour, meal, or even fine sawdust as a substitute for pollen in early spring. Della Rocca, in 1790, advised giving flour, mixed with honey, in early spring, to hasten the breeding. Dzierzon saw his bees carry flour from a neighboring mill. The hint was not lost upon him, although he did not at that time know of others having followed the same idea before. Quinby, in 1866, advised the supplying of rye flour, ground fine and unbolted, in boxes outside of the hive. Like Mr. Langstroth, he noticed that the bees neglected it as soon as the blossoms appeared. However, they often become so accustomed to bringing it that some of the workers continue their visits to the flour even after most of the bees have begun to bring pollen. There is no doubt whatever that they bring honey from the hive to knead it. Pellets similar to those which Mr. Wilsey noticed on the bottom-boards will be found in the boxes where the flour is given. They are evidently dropped by the bees in their hustle, perhaps in running against each other. Those pellets are very sweet, as we have ascertained by actual taste.

We advise this method of supplying early "bee-bread" to the colonies, when blossoms are delayed and there are no stores of pollen left from the previous season. If the bees are slow in coming to it, bait them with a little honey or some old empty combs.

Pollen was also formerly called "farina," which is the Latin for "flour." Bevan thus called it in his "Honey Bee."—EDITOR.]

Bee Diseases

BY GEORGE W. BERCAW.

So far as my observation goes, the two brood diseases, American and European foul brood, are never found in the same hive at the same time. The one type which most beekeepers here dread is the European or black brood, as it is sometimes called.

A good magnifying glass is quite handy in making examinations of the brood. American foul brood shows itself usually about the time that the nurse bees cease feeding and immediately preceding the capping of the brood-cells. It is sometimes quite difficult to detect unless the colony has been affected for some time. It can be observed by the irregular capping of the cells, usually sealed in patches, and the unsealed occasionally empty apparently, as the larva sinks down and takes an appearance resembling coffee color. If a match or tooth-pick is inserted in the cell and withdrawn the contents assume a stringy, thread-like appearance. Later on it dries in the cell. The beekeeper whose organs of smell are sensitive readily discovers an odor resembling that of common joiner's glue in its heated state.

All colonies should be kept very strong, with good vigorous queens. I recommend that no queens be kept at the head of a colony for a longer time than two seasons, especially in California or similar climates, where bees fly during almost the 12 months of the year. In colder climates, where seasons are short, queens will stand longer.

Do not allow in-breeding of your stock if you can prevent it. This can be done if close attention is paid. I believe that in-breeding has a great deal to do with the spread of foul brood. There is no question in my mind that it lessens the vitality of the stock. Each generation should carry the torch of life undimmed to the next. In-breeding is injurious among the animal tribes of various kinds, and this is no less true of the human race.

It is said, on good authority, that the warm climates have a tendency to increase the virulence of foul brood. I am not sure as to this, but injurious insects of various kinds are more destructive to vegetation in the hot than in the colder climates. This may hold as to foul brood. Bees in California fly during the 12 months of the year, and the devastation must be greater under such conditions than where they fly only during three to six months.

As far as my obervation goes, the common black bee is more susceptible to the various diseases than the Italian bee, which is in a measure more immune from the ravages of foul brood.

Glendale, Calif.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Caught 60 Swarms—Moving Bees

1. I began keeping bees in May, and so far I have over 60 strong swarms, which I caught by putting out small boxes in the trees, and so far I have 15 of them introduced into 10-frame hives, and they are doing well. If I had not been suffering with a fractured leg for the last two months, I could have caught 100 swarms easily.

I have been reading an article on page 274 of the American Bee Journal by Mr. C. F. Greening: "It took me 30 years to discover that my children did not have to watch the bees for about four months," etc. Kindly let me know how he does it.

I only want to get the good spring swarms (May swarms), and put them to work for the rest of the year, not having any natural swarming.

2. I want to move my bees about 40 miles by water-way to a better location, as the bees are mostly wild and dark. Which is the best way to close the hive and not smother the bees? CALIFORNIA.

ANSWERS.—1. I don't know how he gets along without watching for swarms, as he doesn't say. The only inkling he gives is where he says: "My swarming for the year is done during May. I have not had a natural swarm for five years." From that it is a pretty safe guess that he shakes swarms in May, thus anticipating any later swarming. If that always works satisfactorily with him, it must be that his bees, his location, or something else must be different from mine. Not every year are my bees strong enough in May to be ready to be divided. If I should divide them so early, I would expect some of them to swarm later on. But being so much farther south, May is likely none too early for you. At any rate, if you will shake or divide your colonies as late as you can without having them swarm naturally, you will likely have little natural swarming later.

2. Use wire-cloth for ventilation. To close the entrance of a hive, take a piece of wire cloth as long as the inside width of the entrance and 2 or 3 inches wide. Bend it at right angles, and then crowd it into the entrance so it will be wedged fast. But that will not answer if your entrances are like mine, 2 inches deep. In that case take a strip of wire-cloth about 2 inches wider than the depth of your entrance, and as long as the inside width of the entrance. Double over the edge ¾ of an inch, or an inch, and crease it down flat. Place the wire-cloth against the entrance with the folded edge down at the bottom-board, and nail over the upper part of the wire-cloth a strip of lath with a small nail at each end. If the weather is cool, or if the bees be moved at night, this ventilation at the entrance may be enough. If more is needed, make a frame the same size as the top of the hive, cover it with wire-cloth, and fasten it on top of the hive with wood screws. If necessary, the cover can be put about 2 inches above this, a block at each corner holding up the cover, being fastened with hive-staples. Even with this ventilation, if the weather be hot and the bees kept on the way long, water should be sprayed on them from time to time.

Granulation ol Honey

What causes the granulatiou of honey? Is there any way to prevent it? I sold some to a man this fall. He says it was granulated in the combs and he will not buy any more. Does it make any difference when the honey is gathered from different flowers as to its "sugaring?" MAINE.

ANSWER.—The granulation of honey is caused, or as least hastened, by cold. Some honey, however, granulates readily without being reduced to a low temperature, since the honey from some plants granulates very readily, while the honey from some other plants scarcely granulates at all. Frequent changes from warm to cold favors granulation more than a steady continuance of cold

Stirring honey hastens granulation. If honey is heated as much as it will stand without injuring its aroma or flavor, say somewhere below 160 degrees, and sealed up while hot, it will continue liquid.

Your inquiry, however, is more particularly about comb honey. While honey in the comb is slower about granulation than extracted honey, we are more helpless about preventing granulation or reducing it to a liquid state after it is once granulated. To be sure, some have reported melting comb honey—or bringing it again to a liquid state—without injuring the comb, yet it must be a rather ticklish job. I *think* that honey left a considerable time on the hive is less inclined to granulate than that which is removed just as soon as it is sealed, but here you meet the trouble that leaving it on the hive too long darkens the comb. Perhaps the best you can do is to leave your sections on as long as you can without having the combs darkened, and then keep them in as warm a place as you can until sold.

Kind of Super to Use?

I expect to engage in the production of comb honey more than ever before, and desire advice and directions as to the width of sections you use with separators, and the width you would use without separators.

In your opinion is it absolutely necessary to use separators in order to get the largest possible number of marketable sections? I believe you use the T supers; if not, what kind of super do you recommend?

FLORIDA.

ANSWER.—I use the T super, and know of nothing better. I use 4¼x4¼x1⅞ sections, as do the majority, with plain wood separators If you want to dispense with separators, you will get combs of the same thickness by having the sections 1⅝ inches instead of 1½. But I don't believe you can get along without separators. A few beekeepers do get along without them, but most of them find it true economy to use them. I have tried doing without them, and it would take a good deal of money to hire me to continue it.

Uniting Two Colonies

1. Let me designate two colonies very strong and just ready to swarm, as Nos. 1 and 2. If No. 1 should swarm before No. 2, would it be all right to move No. 2 to a new location and set the swarm on the old stand of No. 2? Would they accept the field bees of No. 2?

2. If, in the spring, one should have a number of weak colonies, could they be united with stronger ones and not have any fighting?

MAINE.

ANSWERS.—1. It should work all right without any fighting.

2. If you put two colonies together without any precaution, each one having its own queen, there is danger of fighting. A great many times I have safely united by taking 1, 2 or 3 frames with adhering bees from one colony and simply placing beside the broodnest in another hive. A safe way is to place one hive over the other with a common sheet of newspaper between. The bees will gnaw a hole in the paper and gradually unite peaceably.

The Dadant Hive

I am not acquainted with the Dadant hive, and do not have the book. (I have the original "Langstroth," third edition, printed in 1873, the year I bought it.) From the cut on page 419, December issue of the American Bee Journal, it appears that the Dadant hive has a double back. What is the object of the extra board, marked *F*? It seems to me that this would only make the hive heavier and more expensive. At the front, the thin strip, *H*, provides a bee-space, *R*, *P*, between the super and the cap. Would not a similar strip at the rear accomplish the same result? I can see no reason for the wide space, *P*, *R*, at the rear of the super. I presume that the wide space, *T*, over the super is to provide room for a quilt, a mat, or a thin board, laid on top of the extracting frames.

I am only asking for information, having no intention of making any such hive.

CALIFORNIA.

ANSWER.—The Dadant hive is a cold country hive. The double back and the two dummies, one on each side, make it a double-walled hive on all sides, but the front, which we always aim to face south. The bees are, therefore, better sheltered on the cold sides. We find this much better for wintering than the single wall. As to the cost, if we stop to figure that a hive which is well made and well painted will last 30 years, we will not hesitate much to spend what we think is necessary to make it good.

The double back also has another advantage. You will notice that the outer board drops lower than the bottom-board. This effectually protects the bottom against any rain or moisture that might slip in from the rear.

In a warm country like California, where wintering is not difficult, a rear strip like the one in front will give a surface sufficient to adjust the cloth and straw mat,

NO. 1.—HYBRID APIARY OF G. F. JONES, AT GALAX, VA.

Mr. Jones has found that hybrids do better "in his locality" than pure Italians. They are less inclined to rob, need less feeding, and make more honey.

for the additional strip is for that purpose. You could, therefore, dispense with the rear board. We use both cloth and straw mat. In addition, as our cover telescopes, we like plenty of room all around and over the super, and we make it a trifle narrower than the hive body, so as to have room all around. We use only 10 frames in the super, with a space of 16 inches inside, or one inch and six-tenths for each comb. This gives us heavier extracting combs than usual. We sometimes use only 9, when they are already built and very thick. The telescope cover, which may seem superfluous to many persons, is very convenient to prevent robbing around the upper joints.

We are not urging the use of our hive. We are content to use it ourselves, but realize that most apiarists prefer something cheaper.—EDITOR.

Stingless Bees

Is it true, as the newspapers report, that stingless bees have been produced? CALIFORNIA.

ANSWER.—There are stingless bees in South America, as has been long known, but they are not of value commercially. What you have reference to, however, is likely the report that has been going the rounds of the papers, more or less exaggerated, that a beekeeper in England has produced bees that do not sting, although having stings. From what is said about them in the bee journals there, the likelihood is that they are no gentler than bees have been found at many times in different places.

Reinforced Foundation

Please state in the American Bee Journal the advantage in using the reinforced comb foundation. Some claim it takes less than other comb foundation, being thick on top and thin on bottom. If there is any comb foundation that is better please let me know, and if it is a fake then also give us the facts. CALIFORNIA.

ANSWER.—I did not know that it had ever been claimed that less foundation was needed if reinforced. Likely what you mean is that a less weight of wax might be used in filling a hive with foundation. I do not see why that may not be true. Foundation for brood-combs must be of a certain weight to prevent sagging. But the sagging is chiefly at the top. Now, if we use lighter foundation and reinforce the top part, there is a saving of wax. It is claimed also that bees begin work more promptly on the wax that is painted on. I have never used it enough to speak with great authority, but I do not believe there is any fake about it, and I do not remember having seen a report from any one who condemns it after having tried it.

Shallow or Full Depth Frames?—Extractors

1. What size of extracting frames are better, the shallow frames or the full depth?

2. What size extractor is better, with 9⅝ comb baskets or 11⅝? OHIO.

ANSWERS.—1. The shallow frames are the better, probably in every respect except that they cannot be used interchangeably with brood-combs.

2. Get 9⅝, unless you have frames deeper than the Langstroth.

Beginner's Questions

1. Every year some of my honey is devoured by moths. Is it the race of bees which causes it? What would you advise?

2. I have a strong colony of bees in a common box-hive, the entrance is small, and I do not secure much honey. Would you advise me to transfer them into modern quarters? What time would you advise, early in spring or at the height of clover bloom?

3. I have three old colonies of bees, would you advise me to requeen in spring?

4. Part of the combs in the frames in these hives are not straight so I can lift them out, would you advise me to take them out and use full sheets of foundation?

5. I run for comb honey and use separators in my supers, what kind of starters would you advise me to use, one at the bottom and top of the section? ILLINOIS.

ANSWERS.—1. I suppose you mean the larvæ of the bee-moth, or wax-worms, as they are generally called, eat the combs. This they may do, no matter what kind of bees you have, provided colonies are weak, but the trouble will not be nearly so bad if you have Italians. Indeed, with strong colonies of Italians you will probably have no trouble at all. So long as the trouble continues, you would do well to fumigate your comb honey. If you use sulphur you will do well to fumigate twice; the first time very soon after taking the honey from the bees, and the second time two or three weeks later, to kill the worms that were in the eggs at first fumigation. If you use carbon disulfide no second fumigation will be needed, as that kills eggs as well as larvæ.

2. Wait until the colony swarms; hive the swarm in an up-to-date hive, set it in place of the old hive, and put the old hive close beside it. A week later move the old hive to the opposite side of the swarm, and two weeks later still (or three weeks after swarming) break up the old hive and add its bees to the swarm.

3. That depends. If the colonies are of good stock, let them alone. If they are of poor stock, requeen after honey is yielding, or perhaps full better about the close of harvest.

4. Yes.

5. Yes; a ⅝ starter at bottom, and a top starter that will come within ⅛ of an inch of the bottom one when both are fastened in.

T Supers

I read in "A B C of Bee Culture" that you use the T supers. I have a few regular supers on hand, but figuring how much furniture it takes, and the trouble to keep them clean, I thought perhaps this was your reason for using the super you do. WEST VIRGINIA.

ANSWER.—My reason for using the T super is that I think I can produce section honey of fine quality with less labor and expense than with any other kind I have tried, and I have tried many kinds. I think very few who have used the T super probably have given it up. Some who have condemned it have never used it properly. I know of no super that allows the same number of sections in more compact form. When 4 supers are on a hive—in a good season it is a common thing to have 4 to 6 supers on a hive—the distance from the top of the lower section to the bottom of the upper section is not more than 9½ inches. It does not seem possible to invent any super that will allow the sections to be in less space, for no room is taken up with bars under or over the sections. In most other supers there is a bottom-bar under the sections, and in some a top-bar as well. In the latter case, even if top and bottom bars be only ¼ inch thick, the distance between upper and lower sections, instead of being 9½, will be 11 inches. But a bottom-bar ¼-inch thick is likely to sag, and even ½ inch may sag through warping. The T-super has the advantage that the T-tins are entirely rigid, with no sagging whatever. I might go on and tell how easy it is to fill the super with sections, and how easy to clean the sections. All these things, when properly done, set the T-super at the head, in my judgment, as the best super for producing comb honey. Along with this is the fact that it costs less.

Bigger Crop for Dr. Miller With 10-Frame Hives

1. How much more honey would you have gotten this past season if you had used 10-frame hives?

2. Don't you think the 10-frame hives are a better all-around size than the 8-frame? ILLINOIS.

ANSWERS.—1. I don't know. Possibly more; possibly less.

2. There are many factors to be considered in the case. An 8-frame hive is lighter to handle, and so are the supers used with it. Sometimes a 10-frame hive is too small, and if two stories are used it is too large, being practically a 20-frame hive. A 16-frame hive would be better: that is, two stories of 8 frames each. It is a common thing for colonies in 8-frame hives to run short of stores

No. 2.—Mr. Jones' Virginia apiary of pure Italians. See "Reports and Experiences" Department.

in spring or early summer, even if all available space may have been well filled. That may make little or no difference if the careful bee-keeper be right on his job to supply the deficiency. With the inexperienced or careless beekeeper it may make the difference between success and failure. But even the careful beekeeper could feel a little more easy in mind with the larger hive. If the bees be left to their own devices, a colony in a 10-frame hive is likely to be stronger than one in a smaller hive, when the time for the harvest arrives. Taking all these things into consideration, it would seem that the larger hive is the safer to tie to.

Now it would be just like you to turn on me and ask why I use 8-frame hives. Well, I have them, and it would be quite a job to change all my hives and supers. I am used to the extra management needed for an 8-frame hive, and that makes it less objectionable than it would be for a beginner. A 10-frame hive feels a good deal heavier to me now than it did 30 or 40 years ago, so that the matter of weight is a stronger factor with me than it is with the average beekeeper. Yet I sometimes dream that I'd like yet to have a few 10-framers so I could compare them with the smaller hives, and so I could have the fun of feeling easier about the bees running out of stores in winter and spring.

Does Presence of Moisture Mean Imperfect Wintering?

I am wintering my bees out-of-doors in the following manner: Take off cover, place piece of burlap over frames, place empty comb-honey super on top of this, fill with chaff, put cover on top raised one-sixteenth of an inch. I do this to prevent moisture from collecting inside. This does prevent it to a great extent, but even with this protection, when we have a spell of weather with the thermometer down to zero every morning for a week, some frost will collect on the walls and outside frames of hives, and there will be some ice inside around the entrance; but the clusters are apparently dry and comfortable. Do you think this much moisture will keep the bees from wintering perfectly? I have tried packing outside on top of the cover. It didn't do much good. MONTANA.

ANSWER.—When you go out in very cold weather on a long drive, you often find frost and ice collecting on the wrappings about your face. That is no proof that you are not wintering all right. Same with the bees. They are breathing out moisture all the time, and when it's cold enough you will find that moisture condensing into frost and ice, even though the bees be wintering all right.

Shipping Bees 1500 Miles by Railroad

1. How many 8-frame dovetailed hives with extracting supers will it take to make a 20,000 pound carload?

2. How about fixing bees in the hives to be shipped 1500 miles by rail? How shall I go about it to do a good job so there will be no bees getting out, and how should they sit in the car—lengthwise? OREGON.

ANSWERS.—1. That depends upon the weight of the hives and upon the capacity of the car. Of course a 10-frame hive ought to weigh more than an 8-frame one, and a hive with much honey should weigh more than one with very little; also there is quite a difference in the capacity of cars. Find the average weight of your hives with their contents and outfit, and see how many times that is contained in the amount you want for the load. That will give you the number to make the carload.

2. To make a good job of it is something of an undertaking. In brief, you will use wire-cloth for ventilation, having the entrance closed with it, and having a frame the size of the top of the hive covered with wire-cloth, which frame you will fasten upon the top of the hive with four wood screws. You will put the hives in the car with the frames running in the same direction as the rails of the railroad, nailing strips on the bottom of the car so the lower tier of hives cannot shuck about. You must not set the upper tiers of hives piled up directly upon one another, for that would stop ventilation; but over the lower tiers you will put 2x2 or 2x4 scantling, running across the car, on which to rest the upper tiers, thus leaving a space for ventilation. You will probably use a cattle-car, which favors ventilation; and you will see to it that you can get at all the hives to spray the bees with water when they become excited and heated.

REPORTS AND EXPERIENCES

Good Report from Michigan

With eleven coloniess 9 good ones and 2 very weak ones I produced 3,000 one pound sections of salable comb honey and increased to thirty-eight colonies, all strong and in good condition for winter and only had to feed two. Most of my honey was clover and was sold at home at an average of 18½c per lb.

I use eight or nine frame hives and run on the double deck plan, setting off upper decks for increase as fast as I get six combs (four of brood and two empty combs and two full sheets of foundation). I give them one or two supers—bees and all—from the old colony.

L. & H. APIARIES,
Clarkston, Mich.
Dec. 15, 1913.

Split Frames and Sections

If a frame instead of being grooved with a wedge was split in the center and a sheet of foundation laid between the two halves and then nailed together well, would it not be a much more substantial job?

If the honey sections were split through the center and the super frame laid down on a flat surface, four of the half sections placed in it, then a sheet of foundation of proper size laid on it, then four more halves laid on that and pressed down tight, the whole thing picked up and placed in the super and a separator put in and another frame filled as before and so one until the super is full and then wedge up tight, it seems to me it would be less trouble and a better job. The foundation would certainly be in solid and full. I think the large frames should have the two lower corners clipped off for an opening around the sheet of comb and a hole about 1½ or 2 inches made in the middle, just above the center so that the bees could pass through in winter without having to crawl around the outside of the frame. What do you think of the scheme? Of course, if it is worth doing, the frames and honey sections should be made in halves at the factory as one could not do a good job after they are already made.

Silvis, Ill. C CORBIN.

The section splitting scheme has been in use for years in England and is also used in this country. Mr. Aaron Coppin of Wenona, Illinois, produces all his section honey in that way. Why it is not used more by comb honey producers I am unable to say, unless it is because the outside of the split section does not look quite so neat.

As to the splitting of the frames, it would have a great fault, that of making the end shoulders too weak after they were split. We find no trouble in putting in the foundation with the wedge. We believe that after practice a man can put it in faster than he could nail the frame together.

Cutting openings in the combs, as you suggest, would be of no use, for the bees almost invariably fill those openings again. We tried it years ago to our heart's content.

EDITOR.

Praise for Hybrids

I am enclosing three views of my apiaries. No. 1 is my Hybrid yard. This yard has no pure Italians in it and it is my finest yard;

No. 3.—Mr. G. F. Jones' home apiary up in the Blue Ridge Mountains, from which he never gets surplus. It is kept near home for experiments.

it contains fifty-six colonies. I secured 1800 lbs. of sourwood honey from this yard. The bees are in fine condition for wintering and I never fed them a pound of sugar.

Cut No. 2 is all pure three and five band Italians. This yard contains forty colonies, and from it I secured 1950 lbs. of honey. You will notice this yard is less in number by sixteen colonies and gave 100 lbs. more honey. But I am sorry to state that this yard is determined to "starve to death" and I have already fed it 325 lbs. of sugar. Now it is only one-fourth of a mile from my Hybrid yard, and as the climate and conditions are exactly the same, it is a puzzle to me to explain this difference in the two yards. I am bound to praise the Hybrids.

Cut No. 3 is my home yard, twenty-five colonies. My home and this yard are situated on top of the Blue Ridge Mountains, about three-thousand feet higher than my other bees. This yard is across the line between North Carolina and Virginia. These bees are tucked away in winter quarters when my other yards are out working on soft maple and peach bloom; it is only one hour drive from my home down to the valley where I find flowers blooming and bees humming. I never get any honey from my home yard. I have 119 colonies and only had one swarm to come out this season. I enjoy reading the American Bee Journal and most especially the Editor's travels through the Old Countries.

G. F. JONES.

Nov. 29 1913.
Galax, Va.

Home of G.F.Jones, and Some of His Helpers.

Good for a Beginner

This is my first year, and all I learned was from the American Bee Journal and the book that I bought of you. I had 70 lbs. of honey. How was that for a beginner, his first year, with no help?

E. F. REHBERG.

New Haven, Conn.

Stopping Leaky Joints

Just read your editorial comment in January issue "Beeswax for leaky joints in Feeders." This has been my greatest trouble with the Division Board Feeders. I can nail them perfectly and wax them well; they may not leak at first but just as soon as the feeder is used a little it will swell, crack, or in some way leak; the syrup will run out and incite robbers. Of course, I got the wax only hot enough to melt. You say use a preparation of *hot* wax, rosin and fine wood ashes. Please give the proportion of each. I suppose you mean hard or English rosin made or left from distilling.

J. A. SMITH.

Lawrenceville, Ga.

As a matter of course if the cracks in your feeders are very large the hot wax will run through without stopping there. The joints should first be made as tight as possible.

The preparation of wax, rosin and ashes is usually made with one part of beeswax to four parts of hard rosin, melted together. The ashes are added in such quantity as may be necesary to harden the preparation. A little trial will give the proper proportions. The less wax is used, the harder the preparation becomes. It becomes hard very quickly.

Feeders made of light wood and not coated with some sort of preparation or paint will soak the feed and swell. Then if allowed to get dry they shrink and leak again.

We have stopped very large cracks in barrels with the wax and rosin preparation above mentioned. For large cracks more ashes are used. In melting rosin, beware of its tendency to get afire or to boil over when hot.

Does Beekeeping Pay?

We commenced the season with 150 colonies, took 500 twenty-four lb. cases of very fine honey and increased to 185 colonies and have quite a lot of chunk honey left for our home trade. We ran short of sections just when we needed them most. We hope to do better next time. Our secret of success is young queens and strong colonies. Bees are packed in chaff and are wintering nicely. Will need a few good queens to breed from in June as I want to change the stock just a little. This year our best colonies made nearly three-hundred sections but our average was about five cases to the hive, spring count; not quite as well as Dr. Miller did.

Colorado. J. E. WALCHER.

Good Crop in 1913

I have thirty colonies of bees and all in good shape. Honey crop was good this year but not quite as good as last year. We bave not had any snow bere yet. Our bees are all on the summer stands.

CATHERINE WAINRIGHT,

Tilton, Iowa.
Jan. 10, 1914.

Fair Yield

My bees did fairly well the past season. I have extracted 712 lbs. from twenty colonies winter. I would have made a big run this season if the linden trees had bloomed.

ED. WINKING,

Jan. 8, 1914.
Quincy, Ill.

A Good Wisconsin Report

Had six colonies spring count; received something like 900 lbs. of honey, mostly comb honey of best quality. Extracted sold for 10c lb. and comb for 16c lb.

MR. J. E. BALZER,

Sauk City, Wis.
Dec. 17, 1913.

Good Prospects in Texas

Prospects for early honey and queens were never better here at this time of year. Bees are getting pollen now and our best honey plants are up in fine shape and beginning to bloom. No frost here yet this winter. The floods did some damage in my section. I was water bound a week in the flooded portion of the State. There is no place like South Texas.

GRANT ANDERSON,

San Benito, Tex.

Nearly Three Tons of Comb Honny

I try to study the nature of the honey bee, for the nearer one comes to nature, the nearer he comes to perfection. There are many things we can do to assist nature and thereby profit by our work. There are so many who keep a few bees and have no knowledge of the real instincts of the little workers, also no knowledge of the value of their product so that sometimes they spoil an otherwise good market. I shipped about one and a half tons this fall and sold nearly a ton of honey at home. I work for comb honey.

J. C. DAVIS.

Marshfield, Wis.
Jan. 5, 1914.

Dry Season but Good

I did not lose any colonies last winter. I had ten colonies to begin with and increased to fourteen. I harvested six hundred pounds of honey from the ten, spring count. I had two that gave 112 sections each. The outlook is not very good for next year.

HENRY BEST.

Hibbetts, Ohio.

Prospects Not Bright for 1914

This is my third season with bees. Twenty colonies, Spring count, gave me 1,000 lbs. of honey this season; about 280 lbs. comb and the balance extracted honey, all of good quality and a very dry season at that.

J. A. HORN.

Westwood, N. J.
Dec. 10, 1913.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

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Denver, Colorado

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This is the year to add poultry to your bee business. Enormous demand for chickens and eggs, on account of meat shortage, boosts prices highest ever. Let out great Free Service guide you. Free for the asking. Start right with

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Dept. 83 Buffalo, N. Y.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

QUEENS, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

PHELPS' QUEENS are hustlers.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

GOLDEN all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
2Atf Robert Inghram, Sycamore, Pa.

1914 QUEENS—Moore's strain of leather-colored Italians. In April at 75c. Write us for prices on nuclei. Address,
Ogden Bee & Honey Co., Ogden, Utah.

GOLDEN and 3-Banded Italians, also Carniolan Queens. Tested, $1.00; untested, 75c each. Write for prices of bees per pound and nuclei. C. B. Banktn,
tf Box 65, Buffalo, Leon Co., Tex.

PHELPS' QUEENS will please you.

ITALIAN QUEENS—Bees by lb. Descriptive List free. Apiaries under State inspection. Leaflets, "How to Introduce Queens," 15c. "How to Increase," 15c; both, 25c. 2A1t
E. E. Mott, Glenwood, Mich.

QUEENS—10 percent discount for orders received before May 1, to be filled in May and June. Tested, $1.00; untested 75c. Dead ones replaced free. 2A9t
S. Click, Rt. 2, Box 16, Mt. Jackson, Va

CALIFORNIA'S Golden and 3-banded equal the best. Try them March 1. No. culls. Tested, $1.25 to $2.50. Select mated, one, 75c; 12, $8.00; 50, $32; 100, $60.
W. A. Barstow & Co., San Jose, Calif.

THE RUSH FOR PHELPS' queens has been so great that we will be unable to take care of any more orders this year. We have some of the finest breeders for next year that you ever saw. Give us your orders early. C. W. Phelps & Son,
Binghamton, N. Y.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

DUNN'S Golden Italian queens, bred strictly for business that produce a strong race of honey gatherers. March 1 to Oct. 15. One, mated, 75c; 6, $4.25; 12, $8.25, 50, $32.50; 100, $60. L. J. Dunn, Queen Breeder,
2A9t Box 337 G, R. R. 6, San Jose, Calif.

FOR SALE—3-banded Italian queens, nuclei and bees by the pound. Being large honey-producers, we breed hustlers. Untested queens, each, 75c; tested, $1.25. Without queens, 1 pound of bees, $1.25; 2-frame nuclei, $2.50. Write for a complete price list.
2Atf Brown & Berry, Hayneville, Ala.

QUEENS bred from Morse's and Doolittle's best Italian stock. Untested, 60c each; $6.60 per dozen; $50 per 100. Tested, 90c each; $10.20 per dozen; $80 per 100. Delivery guaranteed. Book orders now. Nuclei any quantity; 2-frame, $1.50; 3-frame, $2.00. Add price of above queen wanted.
Spencer Apiaries Co., Nordhoff, Calif.

WE requeen our bees every year with best Italian stock to prevent swarming. We offer the one-year old queens removed from these hives at 50c each; $5.40 per doz.; $40 per 100. Delivery guaranteed. Book orders now. Nuclei any quantity; 2-frame, $1.50; 3-frame, $2.00. Add price of above queens wanted.
Spencer Apiaries Co., Nordhoff, Calif.

CALIFORNIA ITALIAN QUEENS—3-banded and Goldens by return mail after March 15 Select untested, one, 75c; 12, $8.00. Tested, $1.00; breeder, $3.00. Bees by the pound, a specialty, ready April 1. 1 lb., $1.35; 2 lb., $2.50. Delivery and satisfaction guaranteed. Correspondence solicited. Circulars free.
J. E. Wing, 155 Schieler Ave., San Jose, Calif.

THREE-BANDED and Golden Italian queens. Ready March 1. They have been bred for three points, prolificness, gentleness and honey-gathering qualities Prices, Select Untested, 75c each; 6, $4.25; 12, $8.25; 50, $32 50; 100, $60. Tested, $1.50; Select Tested, $2.00.
Garden City Apiary Co.,
R. R. 3, Box 86, San Jose, Calif.

HONEY AND BEESWAX

"NULL'S FAMOUS MELILOTUS HONEY.' Sample for stamp. Null Co., Demopolis, Ala

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—Choice extracted honey, thick, well ripened, delicious flavor. Price, 9c per pound in new 60-lb. cans. Address,
2Atf J. P. Moore, Morgan, Ky.

FOR SALE—4000 lbs. fine quality raspberry-milkweed honey at 8c per lb. Also 1000 lbs. light amber at 7c f. o. b. here. All in new 60-lb. cans (2 in case). Small sample free.
2Atf P. W. Sowinski, Bellaire, Mich.

BUYERS of honey will do well by sending for the February number of the Beekeepers' Review containing the name and address of over 100 National members having honey for sale. It is free for the asking.
The Beekeepers' Review, Northstar, Mich.

$1000 (one thousand). I will pay the above amount in cash for one pound of honey that is equal to my *Red Ripe* (Harnessed Sunbeams) Honey in digestibility, nutrient, value or flavor. Samples and prices free.
C. W. Dayton, Owensmouth, Calif.

INDIA—The Eastern Commercial Agency, 3149 Richey Road, Ahmedabad, Contractors and Agents, export beeswax and India provisions, pickles, drugs and condiments. Import motor, electric and municipal goods and machinery.

FOR SALE—No. 1 white clover comb, $3.50 per case; No. 2, $3.00 per case. No. 1 fall comb, $3.00 per case; No. 2 fall, $2.50 per case. All cases have 24 sections, and 6 cases to carrier. Quirin-the-Queen-Breeder,
Bellevue, Ohio.

EXTRACTED HONEY—Best pure Illinois. White Clover and blends with Sweet Clover. Amber Fall and Spanish-needle grades. Also fine Western Water-white and Light Amber Alfalfa. All packed in 5, 10 and 60 lb. cans. Some in barrels. Samples and prices Free. Dadant & Sons, Hamilton, Ill.

SUPPLIES.

FOR SALE—Root's goods and Dadant's foundation at factory prices.
Spencer Apiaries Co., Nordhoff, Calif.

BEEKEEPERS!—If you are interested in double-walled hives write for our free catalogue. The L. F. Howden Mfg. Co.,
Fillmore, N. Y.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They re nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

BETTER HIVES FOR LESS MONEY—Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

FOR SALE

DOUBLE the honey crop and save half the labor, 25c. Money back if not satisfied.
O. N. Baldwin, Baxter Springs, Kan.

ONE 2½x13 Vandervoort Mill, light or medium brood, $18; one-sixth inch super, Root Mill, $8 00. Both in perfect order.
F. H. Cyrenius, Hillside Park, Oswego, N. Y.

FOR SALE—20 Horse Power I. H. C. Delivery Truck; good as new. In fine condition and running order. Will be sold at a bargain.
A3t L. Werner, Edwardsville, Ill.

1 REPRINT of Old Original Langstroth work has just been printed, and will be mailed on receipt of $1.00. See full page advertisement in this issue.

FOR SALE—Empty second-hand cans, two cans to the case; good as new; 25c per case.
C. H. W. Weber,
2146 Central Ave., Cincinnati, Ohio.

FOR SALE—My 40 acre farm, 40 colonies of bees, 40 empty hives, all in good condition. Fine location for bees. Must sell before last of April. Selling on account of old age. For full particulars write.
J. Berglof, Rt. 2, Ft. Ripley,, Minn.

A RARE OPPORTUNITY to start in the bee business, with the sale end of the business all worked out. It consists of four yards of bees; 140 colonies all told. One of those yards contains very carefully bred Carniolan bees and some very fine breeding queens of this race. A Carniolan trade that took 500 queens last summer. Two and a half acres land mostly set to small fruit; one horse, harness and wagon; one Overland automobile, model 40, with body to set on for carting bee fixtures to and from yards; one honey packing house 14x28 feet, with full equipment for packing honey in glass. A honey house that takes 2000 dozen during the season. A mail order trade that takes 10,000 lbs. honey in tins, shipped direct for family use. Full equipment for running these bees for extracted honey. This splendid opportunity is open in New Jersey. Address, "Opportunity," care of American Bee Journal, Hamilton, Illinois. 2A1t

MISCELLANEOUS

RUFUS-RED BELGIAN HARES. Price list free. Harvey L. Stumb, Quakertown, Pa.

I GOT 100 pounds of comb honey per colony; my neighbors got none. I'll tell you how for 25c. O. N. Baldwin, Baxter, Kan.

TO EXCHANGE for extracted honey, one Wheel-hoe with Seeder; one Spray Pump; one Cider Mill. All high-grade articles; used very little. Write for particulars.
John E. Miller, 44 Broad St., New York, N. Y.

HONEY AS A HEALTH FOOD is a 16-page booklet giving uses of honey in recipes and as a medicine. Just the thing to create a local demand for your honey. We print your business card on all orders for 100 or more. Prices as follows, postpaid: 50 copies 90c, 100 for $1.50, 250 for $3 00, 500 for $5.00, 1000 for $9.00. American Bee Journal,
Hamilton, Ill.

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FOR SALE—Buff Orpington eggs, pure bloods: $1.00 for 15. Satisfaction guaranteed.
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ADVERTISE YOUR BUSINESS with Business Cards. 500 printed, 75c. 2A1t
Pearl Co., Clintonville, Conn.

THE NUMBER of enquiries coming in for honey labels has been so large that we have decided to put in a stock of these for the convenience of our readers. Should you be in need of anything in this line, send for a copy of our label catalog, which will be sent free. American Bee Journal,
Hamilton, Ill.

HONEY AND BEESWAX

CHICAGO, Jan. 17.—Sales have been very slow and unsatisfactory for the past 30 days, and there does not seem to be any encouragement in the present outlook, stocks are heavy and prices are uncertain, for that reason it is most difficult to give accurate figures. A No. 1 to fancy grades of comb are held around 15c per pound, but alfalfa mixed and sweet clover grades are difficult to move at much lower prices. Fancy grades of white clover and basswood extracted honey sells at 8@9c, according to quantity and other considerations; ambers 7@8c. Beeswax is steady at from 31@33c, selling upon arrival. R. A. BURNETT & CO.

KANSAS CITY, MO., Jan. 14.—The demand for comb and extracted honey is very light, especially for comb. Receipts of extracted light, but receipts of comb large. We quote as follows: No. 1 white comb, 24 sections per case, $2.60 to $2.75; No. 2, $2.40 to $2.50.. No. 1 amber, $2.75; No. 2, $2.25 to $2.50. White extracted, per pound, 8@8½c; amber, 7@8c. Beeswax, per pound, 25@30c.
C. C. CLEMONS PRODUCE COMPANY.

LOS ANGELES, Jan. 20.—There is so little demand at the present time for honey that quotations are merely nominal There are left on the coast only few cars of alfalfa light amber honey, which can be bought at 5½c in carload lots, A very small supply of fancy white orange honey, only enough for local use, is held at 8½c; all in 5-gallon cans. The stocks of wax are most entirely out of producers' hands, and what little is for sale is bringing producers 30c per pound.
HAMILTON & MENDERSON.

SAN FRANCISCO, Jan. 10.—The demand for comb honey has not been very brisk, although all the dark or poorer grades have been sold. No. 1 fancy comb, 15@16c per section, and the extracted honey is not moving at all. The demand seems due shortly, and buyers are waiting for conditions. Nice yellow beeswax, 30c; darker grades, 16@24. The rains so far this season have exceeded the general average or the normal fall, so that agriculturists, as well as beekeepers, are anticipating a glowing crop.
JOHN C. FROHLIGER.

CINCINNATI, Jan. 19.—There is no demand neither for comb nor extracted honey, a condition that is a general rule for this season of the year. However, this season it has assumed a peculiar condition owing to apparent big stocks on hand with some holders who see fit to slash prices. Whether it will have any tendency to further lower the values than they are now, remains to be seen within the next 90 days, and for that reason we will not quote prices this month. Beeswax is in very good demand, and we are paying 32c a pound cash and 34c a pound in trade for good average wax, and from 1 to 3 cents a pound more for something in choice bright yellow, delivered in Cincinnati.
THE FRED W. MUTH CO.

DENVER, Jaa. 20.—Our local market is well supplied with honey, and our jobbing quotations are as follows; Strictly No. 1 white, per case of 24 sections, $2.70; choice, $2.57, No. 2, $2.43. Extracted, white, 8@9c; light amber, 7@7½c. We are in the market for beeswax, and pay 30c per pound in cash, and 32c in trade delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, *Mgr.*

BOSTON, Jan. 20.—Fancy and No. 1 white comb, 15@16c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c. BLAKE.-LEE COMPANY.

INDIANAPOLIS, Jan. 2.0—Honey is moving freely. Fancy white comb is selling at 16@17c; No. 1 white, one cent less Finest extracted, 9@10c in 5-gallon cans. Beeswax is in good demand, and producers are being paid 32c, cash or trade.
WALTER S. POUDER.

CINCINNATI, Jan. 19.—The market on honey is quiet with quite a supply. No demand for off grades of comb honey. No. 1 white sells from $3.50 to $3.65. Light amber honey in cans from 8@8½c. White honey in cans 9 cents. Beeswax is selling at $35 per hundred,

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO,

NEW YORK, Jan. 18.—Our market is decidedly dull, and the demand during the past six weeks has fallen off to a large extent- even more than in former years, notwithstanding the short crop of some grades, While comb honey is pretty well cleaned up small shipments are yet coming in quite freely, and while fancy and No. 1 white are in fair demand, off grades, dark and mixed are almost entirely neglected. We quote No. 1 and fancy white at 14@15c; No. 2 white and light amber at 12@13c; dark and mixed at 10@11c. Prices on extracted remain about the same, with very little trade at this time. Beeswax is steady at from 32@33 per pound.
HILDRETH & SEGELKEN.

Kansas Meeting

The Kansas State Beekeepers' convention will be held on Feb. 26 and 27, 1914, at Topeka. O. A. KEENE, *Sec.*

Pennsylvania Meeting

The Pennsylvania State Beekeepers' Association will hold its annual convention in the Capitol Building, Harrisburg, Pa., Feb. 20 and 21, 1914. An interesting program is prepared. Everybody welcome. H. C. KLINGER, *Sec.*

Wisconsin and Minnesota Meeting

The annual meeting of the Southeastern Minnesota and Western Wisconsin Beekeepers' Association will be held in the Court House at Winona, Minn., on Feb. 24 and 25. All beekeepers and those interested in bees are invited to attend the meetings and take part in the discussions whether members of the association or not.
OZRO S. HOLLAND, *Sec.*

UNTESTED QUEENS, 75c each; 7.50 per dozen. Tested, $1.50. Breeders (choice), $5.00. Nuclei, $1.25 per frame; good supply of bees, ½ lb. Bees Italians) with untested queen, $2.00. One pound with untested queen, $3.00. Full colony in 8-frame hive, with queen, $6.50. Full colony in 10-frame hive, with queen. $7.50. Inquiries from jobbers solicited. Safe arrival and satisfaction guaranteed. Excellent mail and express service. Only twelve hours ride to St. Louis, Mo. Can ship March 20; probably March 10.

Pure Buff Leghorn and Ancona eggs for hatching, $1.00 per setting.

STOVER APIARIES
Mayhew, Mississippi

Dr. Peiro will continue to give the readers of the American Bee Journal free advice regarding the subject of SURGICAL and MEDICAL treatment. Many have availed themselves of this offer. Return postage is all you need to send. Address, DR. PEIRO, 4536 Perry Street, Chicago, Ill.

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ROOT'S
Canadian House
BEES, QUEENS, HONEY, WAX
Poultry Supplies, Seeds
Write for a Catalogue
THE CHAS. E. HOPPER COMPANY
185 Wright Avenue, - Toronto, Ont.

$2000 Crop from 2000 Tomato Plants

This is the remarkable returns secured by John DeBoer with our new early variety of tomato under ordinary care and cultivation. Mr. DeBoer planted in his hot house some seed of our

Rowe's Grand Rapids Market Tomato

and later transplanted 2000 tomato plants out on a small patch of ground under the same conditions as his other varieties. He marketed $2000 worth of these big, luscious tomatoes—a record never before equaled in his experience.

This tomato is large and fine in shape, has a beautiful rich pink color, and solid juicy meat with but few seeds. The delicious flavor makes it a very popular market variety, and it stands shipment well. A very early ripening tomato and a heavy yielder. Uniform in size—about one-half pound each —and nine-tenths of the whole crop, under proper care and cultivation, will grade as Fancy. Rowe's Grand Rapids Market Tomato surpasses all other commercial varieties, and is a splendid shipper.

We are willing to stake our reputation on this tomato. The seed cannot be procured from seedsmen, as we own the entire stock. We are GIVING IT AWAY to introduce THE FRUIT BELT, and you can get a packet, if you act now. This is our

Free Seed Offer

Send us fity cents for one year, or one dollar for the three years' subscription to The Fruit Belt, new or renewal, and we will include a trial packet of this tomato seed. We have only a limited supply, so do it NOW.

USE THIS COUPON

THE FRUIT BELT,
Grand Rapids, Mich.—
Gentlemen:—Enclosed please find 50c, for which send me The Fruit Belt one full year, and also send me free, postpaid, a packet of Rowe's Grand Rapids Market Tomato Seed.

NAME..

POST-OFFICE..................................

Route, No........STATE.........................

WANTED

Honey!

Extracted and Comb

Will buy or handle on Commission

Beeswax

Will Pay Highest Pricse.

Yours very truly,

HILDRETH & SEGELKEN

265-267 Greenwich St., New York, N. Y.

3-BAND LONG-TONGUED RED-CLOVER ITALIAN QUEENS

FOR SALE.—My long-tongued Goldens are proving themselves to be the bee to clean Foul Brood. This is why I have such a large trade in Canada. Mr. E. L. Cox, of Jesup, Iowa, introduced 50 of my 3-band queens in Foul-Broody colonies in 1912; and he said the disease was cleaned up where each of those queens was put. They gathered such a arge crop of honey in 1912 that he bought 50 more in 1913.

One Untested, 75c; 6, $4.00; 12, $7.50; 25, $13.50; 50, $25.00

Double the above for tested queens. Bees by the pound: One lb., $2.00; 2 lbs., $4.00. One-frame nucleus, $2.00; 2 frame, $3.00; 3-frame, $4.00. To all the above packages add the price of queen. I will begin to send out queens in April.

Positively no checks will be accepted. Send money by P. O. Money Orders. All queens arriving dead will be replaced if cage is returned by return mail.

J. B. ALEXANDER, CATO, ARK.

The Most Important Point

To Secure a Crop of Honey

the Coming Season

You must heve the bees, and enough to each colony—in time. But young bees, and young queens **now**, and get them when you want them. Strengthen weak colonies. Replace old, worthless queens.

I will sell and ship from my 400 colonies in north Louisiana an equivalent of 1000 combs sealed brood, covered with **young** bees, in any shape to suit purchaser. Shipped in April or May.

Two-comb nuclei	$2.00
Three-comb nuclei	2.75
One pound bees in Root cages	1.50
Two pound bees in Root cages	2.50
Queens extra, your choice	
Young untested, or one year old	.75

Guaranteed for business.

Orders should be accompanied with about 10 percent of purchace price.

No orders accepted after March 15.

No promise made for additional shipments.

N. B.—Queens without bees will be $1.00.

H. C. AHLERS,

R. D. 1, West Bend, Wisconsin

The Opfer Hive-Entrance Bee-Feeder.—In the spring we must feed the bees to have them strong for clover-bloom. With all the present feeders this is a troublesome job—either the hive-bottom or covers have to be taken off every time we feed. With the Entrance Feeder shown herewith, all you have to do is to push it in at the hive-entrance and leave it there until there is no more need of feeding. It contracts the entrance, and that is what you want in spring. The size of this feeder is 7x8 inches, and ¼ inch deep, and holds 5 ounces of feed. You can feed 100 colonies in about 25 minutes.

In case of foul brood you can feed medicated syrup, and your bees will build up strong and healthy, and be in good shape when clover starts, ready to shake on foundation.

I have used 75 of these feeders about 8 years, and today they are as good as ever. With proper care they will last a life-time.

In spring or in fall most bee-keepers neglect to stimulate brood-rearing—one of the most important things in having strong colonies and good wintering. It does not depend so much upon the amount of feed as it does upon regularity every night (unless the weather is too cold), and you will wonder where your strong colonies come from.

Some of the many good points of the Entrance Feeder are these:

1. It is made of heavy galvanized iron and will last a life-time.
2. It reduces the hive entrance.
3. It reaches where the bees can get at the feed even in cool weather.
4. It feeds the right amount.
5. It will not cause robbing.
6. It will not disturb the colony while feeding.
7. It permits quick work.
8. The bees will not drown in it.

I am in a position to furnish all demands for these feeders at the following prices, f. o. b. Chicago: One for 20c; 5 for 18c each; 10 for 16c each. If ordered by mail, add 10c each for packing and postage.

Address all orders to—**A. H. OPFER,**
6259 Patterson Ave., Chicago, Ill.

WHEN YOU WALK

Into your apiary you surely have some colonies that are

JUST A LITTLE BETTER THAN THE REST

IF THEY ARE OUR

Gray Caucasians

They are surely pets of high degree. Gentle as doves. Always just so. Send or prices.

A. D. D. Wood, Box 61, Lansing, Mich.
or Box 82, Houston Heights, Tex.

Q-U-E-E-N-S

The Old Reliable 3-Band Stock

My queens are reared from imported stock which makes a beautiful bee. They are fine honey-gatherers, and very gentle. Try my queens. Send me your order, and if not satisfied will return your money. Safe arrival guaranteed. 1, 75c; 6, $4.25; 12, $8.00

N. FOREHAND, R. F. D. 2, Brewton, Ala.

BOOKS FOR BEE-KEEPERS

FOR SALE BY

AMERICAN BEE JOURNAL,

HAMILTON, ILLINOIS.

First Lessons in Bee-Keeping, by Thos. G. Newman, revised by C. P. Dadant.—Intended mainly for beginners. Nearly 200 pages, and over 150 pictures. Bound in strong paper cover, showing bee-brood in all stages of development from the newly-laid egg. This book contains the foundation principles of bee-keeping, as its name indicates. Price, postpaid, 50 cts.; or free with the American Bee Journal one full year if paid strictly in advance—by either new or renewal subscription at $1.00.

Fifty Years Among the Bees, by Dr. C. C. Miller.—340 pages, bound in cloth, and illustrated with 112 half-tone pictures taken by Dr. Miller himself. It is a good, live story of successful bee-keeping by a master of the subject, and shows with clearness just how Dr. Miller works with bees and produces tons of honey. Price, $1.00, postpaid; or with the American Bee Journal a year, $1.80; or given FREE as a premium for sending 3 New subscriptions at $1.00 each.

Scientific Queen-Rearing, as Practically Applied, by G. M. Doolittle.—It tells how the very best Queen-Bees are reared in Nature's Way. A good authority says: "It is practically the only comprehensive book on queen-rearing now in print. It is looked upon by many as the foundation of the modern methods of rearing queens wholesale." Price, bound in cloth, 75 cts., postpaid; or with the American Bee Journal a year—both for $1.50. The same book bound in leatherette, 50 cts., postpaid; or free with the American Bee Journal one full year if paid in advance strictly, by either new or renewal subscription at $1.00.

Biggle Bee-Book.—This is a very small cloth-bound, well gotten up book. Its size is 4x5 1-2 inches, and it was designed to be carried in the pocket of the amateur bee-keeper. It contains concise information regarding the best practice in bee-culture. An excellent book for use when a person has only limited time to give to bee-keeping. Price by mail, 50 cents; or with the American Bee Journal one year, $1.35.

A B C & X Y Z of Bee Culture, by A. I & E. R. Root—Over 500 large pages describing everything peraining to the care and management of the honey bees. It is a veritable encyclopedia on bees. 400 engravings. Bound in cloth. Price, postpaid, $2.25, or with the American Bee Journal, both for $2.75, or given FREE as a premtum for sending five new subscriptions at $1.00.

A Modern Bee Farm, by Samuel Simmins. The author is a live English beekeeper. He has kept up with the progress in this line not only in his own country, but all over the world. His views are determined, but very well taken, and his points are made with an accuracy which is convincing. Cloth bound, 470 pages. Price, postpaid, $2.00, or with the American Bee Journal, both $2.75.

British Bee-Keepers' Guide, by Thomas W. Cowan.—This is without doubt the standard work for the English bee-keeper. It is very much condensed, containing 170 pages, and is nicely illustrated and well bound. Price, postpaid, $1.00; or with the American Bee Journal one year, $1.75.

Alexander's Writings on Practical Bee-Keeping.—The late E. W. Alexander is the man who kept 700 colonies of bees at his home place in New York. He wrote a series of articles which have been published in book form. They discuss bee-keeping in broadest terms. 95 pages, paper bound. Price, 50 cents, postpaid; or with the American Bee Journal one year, $1.25.

A Year's Work in the Out-Apiary, by G. M. Doolittle.—The author is an experienced bee-keeper, who tells in this little book the requirements necessary for keeping bees away from home. For any one who is intending to keep bees on a large scale, this book will be invaluable. paper bound, contains, contains 60 pages. Price, 50 cents; or with the American Bee Journal one year, $1.25.

Quinby's New Bee-Keeping, by L. C. Root.—This is a modern edition of "Quinby's Mysteries." Mr. Quinby is well known to all bee-keepers. He, with Mr. Langstroth, was responsible for much of the early growth in bee-keeping in America. Cloth bound, 220 pages. Price, postpaid, $1.00; or with the American Bee Journal for one year, $1.75.

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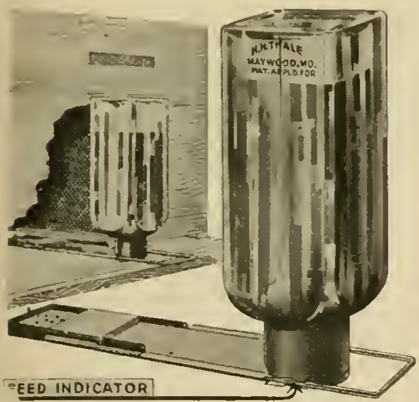
Just received car New Utah Alfalfa Honey, **8 1-2 cents** a pound f. o. b. Kansas City, Mo. **C. C. CLEMONS BEE-SUPP. CO.**
Department A, Kansas City, Mo.



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THALE'S REGULATIVE VACUUM BEE-FEEDER

MOST PERFECT STIMULATIVE FEEDER ever constructed. It feeds inside underneath the cluster, and will fit any hive made. To fill feeder lift off empty bottle and set on full one. It is so regulated by the slide from the outside of the hive to feed any amount you may want the bees to have in one day. If you set it on one-half pint in one day the bottle of feed will run four days and nights, and can be increased or decreased from the outside of the hive without disturbing the bees or moving the feeder. It feeds continuously, thereby imitating a natural honey-flow, and will produce more brood with less cost than any other feeder made, and can be filled any time of day without causing robbing or excitement. Queen Breeders especially cannot afford to be without this feeder, as hundreds of valuable queen-cells are torn down and destroyed by the bees annually on account of improper and poor methods of feeding. With this feeder you control the flow; it feeds continuously, and will produce more cells, better cells, and the bees will not destroy any. Try this feeder; it will more than pay you. Send for feeder circular and Bee-Supply Catalog. I carry a full line of Lewis Beeware and Dadant's Foundation. One of my Vacuum Bee-feeders complete with two bottles **free** with every ten dollar order. Send me a list of your wants—it is no trouble to answer letters.

TERMS, CASH WITH ORDER

One sample feeder, with two bottles, complete by mail postpaid	55c
Ten feeders, complete with one bottle, by freight or express	35c
All orders over ten feeders only	30c
Extra bottles with cork valve, each	10c

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cuts easily and rapidly all large and small bones with adhering meat and gristle. Automatically adapts to your strength. Never clogs. Sent on **10 Days' Free Trial.** No money down. Send for our free books today.

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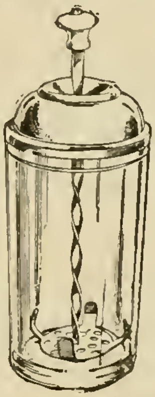

We are fortunate in being able to offer to our readers a real practical egg beater, cream whipper, etc. It is called the "Roberts Lightning Mixer." From the experience of users here, it well deserves its name. It is easy to Clean, Hard to damage, and a Pleasure to Work.

The spiral perforated dasher whirling in every direction, aerates, stirs and lightens, and at the same time it completely and thoroughly mixes every particle.

We recommend it to our readers as being well worth the money.

Sold in pint size. We can send them, postpaid, from the factory in Massachusetts for 50 cents.

Address all orders to
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Bee and poultry supplies at lowest living prices. Two large warehouses full. Do not order before you get our prices

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Send us a list of goods wanted for best prices. **H. S. DUBY & SON,**
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Small and large red, alfalfa, white and yellow sweet clover seed, timothy, blue grass, rape, millet, etc. Also seed corn.

Catalog of apiary supplies and seeds free

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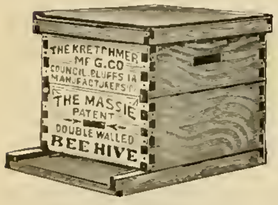
QUICK SHIPMENT OF QUEENS

of 3-band stock reared for honey-gathering qualities
Untested, June, $1.00. Later, 75c
Tested, $1.50. Select tested, $2.
Send your orders now and be assured of having queens when you want them. **R. A. SHULTS, Crosby, Tenn.**

The Double-Walled Massie Bee-Hive


THE KRETCHMER MFG. CO. COUNCIL BLUFFS IA MANUFACTURERS
THE MASSIE PATENT
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For Comb or Extracted Honey

Surest Protection for Bees—Increased Supply of Honey—
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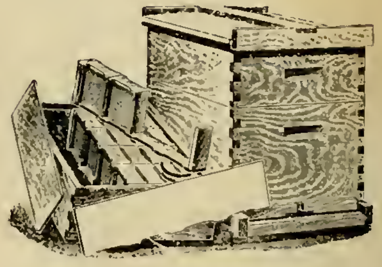
Furnished in the clearest of lumber in either Cypress, White Pine or Redwood

THE MASSIE VENTILATED BOTTOM

Admits fresh air into the hive, lessening the chance of swarming, and giving renewed energy to the bees.

Fifty years in the bee supply business has shown us that the **MASSIE** is **the very best hive,** and testimonials to this effect are received daily from those who are using this hive.



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The Beekeepers' Review

Would like very much to enroll a goodly number of new subscribers for the year 1914. Listen: Besides the 3000-colony series managed from one office, we will begin with the January number of the Review a series of articles by a beekeeper "gray with experience," that we will call the Farmers' Series, or how to produce comb honey with *two visits a year*. The Editor of the Review has looked into this system quite thoroughly, and believes that with this method that will be described in the Review during 1914, that the busy man or farmer can harvest much more comb honey per colony with this system with about a fourth of the work that is required with the ordinary system now in vogue.

We are printing 400 extra sets of the Review for the last half of 1913, and as long as they last they will be included free to all newly paid in advance subscribers for 1914. All progressive beekeepers should subscribe for two or three good bee journals. We are making a special low price on the Review when clubbed with other bee journals. Here are two good ones:

American Bee Journal one year	-	$1.00	Both one year for -	$1.50
The Review " "	-	1.00		
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To take advantage of this low price, all remittances should be addressed

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ORDER Your BEE-SUPPLIES NOW

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Prices Now are Naturally Lower than they Will Be Later

We not only name low prices, but furnish high grade goods as well.

We have been manufacturing Hives, Frames, Sections, Shipping-cases, etc., over 15 years, more than 10 years under the present management.

We have satisfied others, and we will try to please you.

Mail us an itemized list of what you want, and we will quote you.

We want to save you money.

Minnesota Bee-Supply Co., Minneapolis, Minnesota

HONEY

We can furnish honey to beekeepers who have run out of their own product. All our honey strictly First Class.

Water-white Alfalfa
Light Amber Alfalfa
Amber Fall
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White Clover

Write for Prices.

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Paint Without Oil

Remarkable Discovery that Cuts Down the Cost of Paint Seventy-Five Percent.

A Free Trial Packago is Mailed to Every One Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powderpaint. It comes in the form of a dry powder, and all that is required is cold water to make the paint weather proof, fire proof, and as durable as oil paint. It adheres to any surface, wood, stone or brick; spreads and looks like oil paint, and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 216 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.

BEE-SUPPLIES Send your name for new 1914 catalog out in January. Dept. S., C. C. Clemons Bee Supply Co.,
Kansas City, Missouri.

"If goods are wanted quick, send to Pouder."

BEE-SUPPLIES

EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections; no shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POUDER, Indianapolis, Ind.
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Manufacturers
OF THE
"NONE BETTER"
BEE-KEEPERS' SUPPLIES

Perfect sections from young, white, basswood. White Pine Hives and Supers, Excellent Shipping-Cases, Brood-Frames, Separators, etc.
We invite your correspondence.

Guarantee — All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

Page-Kenkel Manufacturing Co.,
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Dittmer's Foundation

Is the **Comb Foundation** made to **suit the Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

Ask for more information; also prices and **FULL DISCOUNT** on all Bee-Supplies.

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AMERICAN GOLDEN ALL-OVER QUEENS
P. G. SNYDER
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PENNA. U.S.A.

Am Now Shipping Untested Queens from My
CELEBRATED PEDIGREED STRAIN!

My bees are the product of many years of breeding by both Swarthmore and Henry Alley. Both names stand out like beacon lights among our past and present breeders, for the best queens ever produced in the United States. Never had foul brood.

SWARTHMORE APIARIES, - Swarthmore, Pa.

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PROGRESSIVE POULTRY JOURNAL?

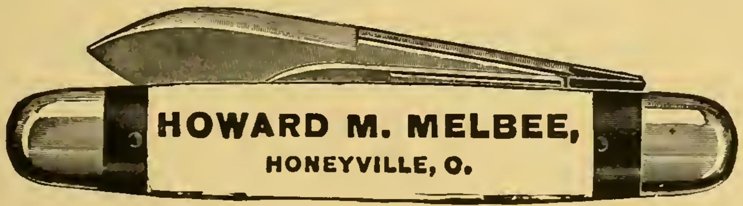
It is published in Mitchell, South Dakota, and is a live paper devoted to the interests of better poultry and more of it. Has practical writers of experience in raising poultry. Well illustrated. Send for free copy.

Progressive Poultry Journal
Mitchell, South Dakota

THE
Discount and Dull Season

is here. Send us a list of goods wanted for next year, and get our prices—a money saving proposition. We have the largest, most complete and best stock of any. House visitors welcome. Catalog ready in January—it's free. **H. S. DUBY & SON,**
St. Anne, Illinois.

BEE-KEEPER'S NOVELTY POCKET-KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other, side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

FOR THE BEST Early QUEENS

Send me your address for Italians and Carniolans. I BEGIN mailing Queens early in March. Untested, 75 cts. each. Tested, $1.25 each. Circular free.

Grant Anderson, San Benito, Texas

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

Honey and Wax

If you haven't made arrangements for the disposition of your honey and wax for this season consult us. We buy both in large quantities, and can assure you of fair and courteous treatment, and a good price for your crop.

Shipping Cases

To sell your crop to the best advantage it must be well to put up in attractive style. We have shipping cases that answer every requirement of looks and utility. Small producers who sell their crops locally will be interested in the cartons in which comb honey is put up to sell to the fancy customers at top-notch prices. We have honey-cans, too, in cases for those who produce extracted honey. In fact, there isn't anything we don't have that the beekeeper needs, either to produce his crop or help to sell it.

Early-order discount this month is 4 percent.

C. H. W. WEBER & CO.

CINCINNATI, 2146 Central Avenue OHIO

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

WE MAKE IT GOOD

THE BEES MAKE IT FAMOUS

The Reputation of

DADANT'S FOUNDATION

Has been built on its merit

It is a Favorite with Beekeepers

BECAUSE

It is so well liked by the BEES

Whether it's a pound or whether it's a ton, every sheet is PERFECT

Satisfaction Guaranteed in Every Way

DADANT & SONS,
HAMILTON, ILLINOIS.

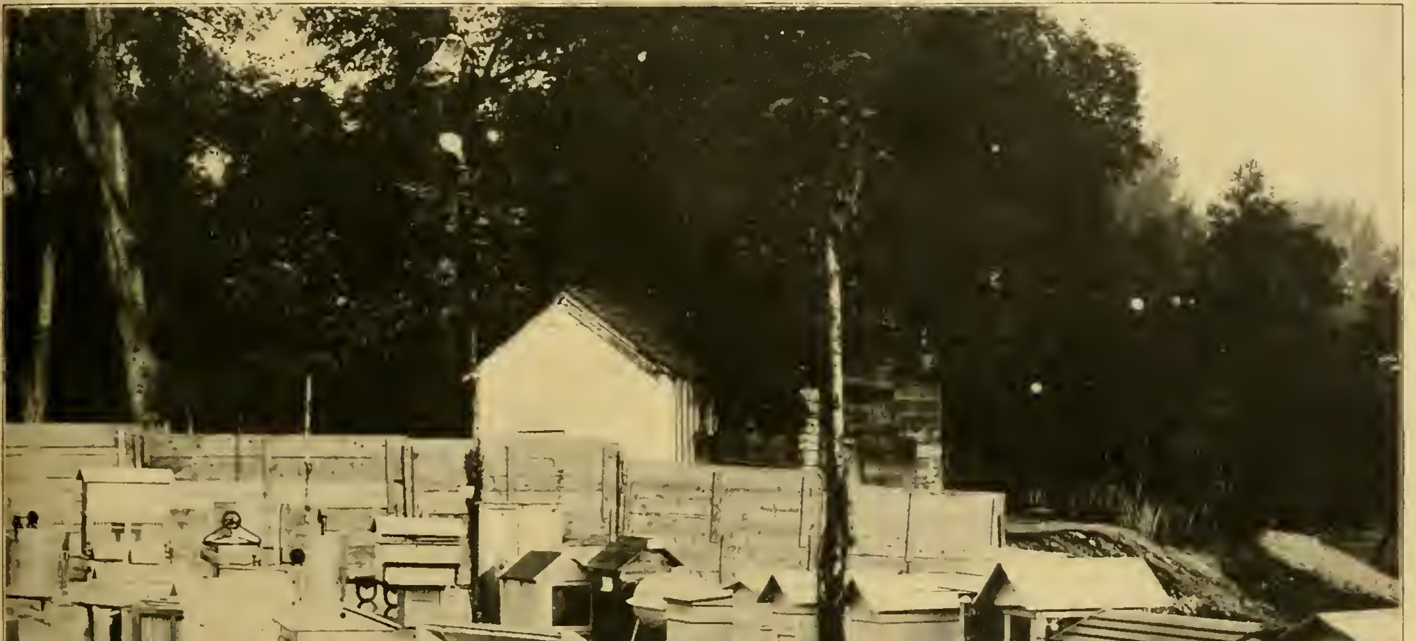
AMERICAN BEE JOURNAL

MARCH

1914

MAR 6 19

Mass Agr'l College (april)
Library Amherst, Mass



Exhibition of Hives at Chalon-sur-Saone

This exhibition was held in the district of France, where is located Mr. Champion, whom the Editor visited while in Burgundy.—(See "Notes from Abroad" in this issue.)

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec13" on your label shows that it is paid to the end of December, 1913.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

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Reading Notices, 25 cents, count line.

Goes to press the 25th of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1805. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n } **ANTHONY BIAGGI,**
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

This is the Discount Season on

BEE-SUPPLIES AND BEES

Write us stating what you are in need of, and we will quote you. If you sell supplies our discount sheet is yours for the asking. Catalog on request.

I. J. STRINGHAM
105 Park Place, New York

APIARIES: Glen Cove, L. I.

It Turns Over an Important "New Leaf"

Beginning with the January Number

The Guide to Nature

SEVERAL NEW FEATURES

"Birds in the Bush," a department edited by Edmund J. Sawyer, with illustrations from original drawings by this talented artist-ornithologist

"The Fun of Seeing Things," a department for young folks, edited by Edward F Bigelow, succeeding his well-known work as editor of the "Nature Science" department of "St. Nicholas" for more than fourteen years.

This department will be really new It will not be "schooly," not "nature study," not to induce parents and educators to say, "It is good for the children," but it will appeal directly to the young folks themselves, and will help them to enjoy natural objects that surround them. It will be true to its name.

Subscription, $1.00 a year **Single copy, 10c**

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ArcAdiA **Sound Beach, Connecticut**

"Griggs Saves You Freight" **TOLEDO** "Griggs Saves You Freight"

New goods arriving permit us to fill orders same day as received, and this with direct lines to your door, and low freight rates, makes **TOLEDO** the best place to order your goods from.

Our **new Illustrated catalogs** for 1914 are here and being mailed out. Send your name for one.

Send us list of goods wanted, and receive our **special prices** for quantity orders. **Beeswax** is in great demand. Send it in now. We pay **32 cents Cash, 34 cents in Trade.** Shoot it in.

S. J. GRIGGS & CO.

24 N. Erie St., Toledo, Ohio

"Griggs is always on the Job."

"*If goods are wanted quick, send to Pouder.*"

BEE-SUPPLIES

EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections; no shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POUDER, Indianapolis, Ind.
873 Massachusetts Avenue

CEDAR WOOD

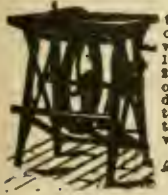
Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.
J. C. Froghliger, Berkeley, Calif.
Greater San Francisco

Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery



Read what J. I. Parent, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free

Address, W. F. & JOHN BARNES
995 Ruby St., Rockford, Ill.

Please mention Am. Bee Journal when writing.

Try My Famous Queens
From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

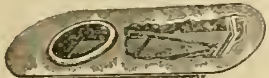
3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, one, $1; six, $5; 12, $9; 25, $17.50; 50, $34; 100, $65. Tested, one, $1.50; six, $8; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two-frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

P-O-R-T-E-R

(Trade mark.)



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SAVES { HONEY TIME MONEY } AT ALL DEALERS

Each, 15c; Doz., $1.65, postpaid

If your Dealer does not keep them, order from Factory, with complete instructions.

R. & E. C. PORTER, MFRS.,
Lewistown, Illinois

BEEKEEPERS' SUPPLIES

Such as Winter-cases, Sections, brood-frames of every description, Section holders, Comb Foundation, Supers, Hive-bodies, Smokers, etc.
Get my prices before placing your orders.

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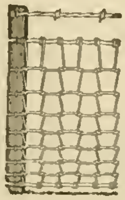

FARM FENCE

41 INCHES HIGH

100 other styles of Farm, Poultry and Lawn Fencing direct from factory at save-the-dealer's-profit-prices. Our large catalog is free.

21 CENTS A ROD

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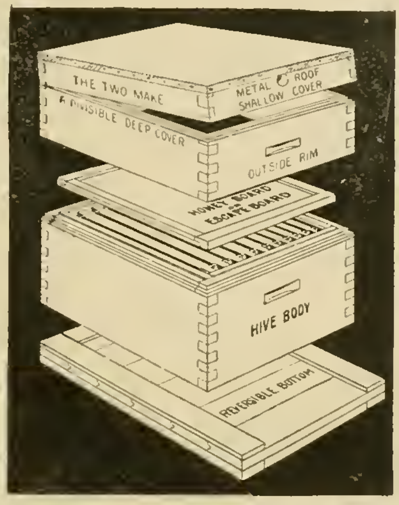


PROTECTION HIVE.

The shallow Metal Roof Cover and the Outside Rim make a divisible deep cover which can be handled together or in part. They eliminate the Chaff Tray nuisance, and the heavy bunglesome deep cover in manipulation. The Rim holds the overhead packing in winter and acts as a super protector at other times. This combination is the finest in hive construction on the market today.

Dead-air space or packing as you prefer; ⅞ material in the outer wall. Special circular showing 10 illustrations will explain all.

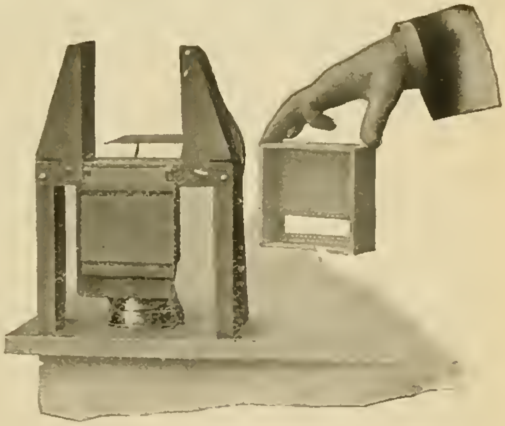
5 10-frame hives like cut....$13.00

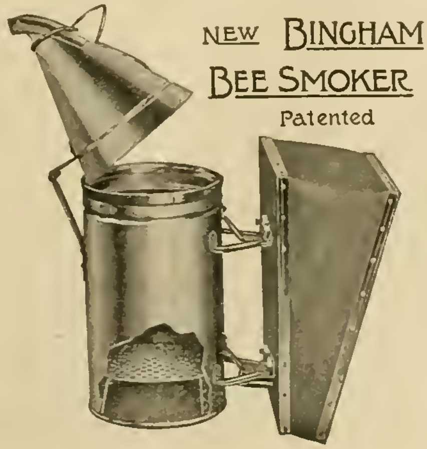
A. G. WOODMAN CO.,
Grand Rapids, Michigan

WOODMAN'S SECTION FIXER

A New Machine of pressed steel for folding sections and putting in top and bottom starters all at one handling. A great time saver and a good job assured with ease. With top and bottom starter the comb is firmly attached to all four sides, a requirement to grade Fancy. Increase the value of your crop this season by this method. We want every one to try this machine. We guarantee satisfaction. Adjustable to any width, 4¼x4¼ or 4x5 section. Model received with much favor by recent Detroit and Chicago Beekeepers' Conventions. Price, $2.50 f. o. b. Weight, 5 lbs. Send for special circular showing large illustrations.

A. G. WOODMAN COMPANY,
Grand Rapids, Michigan





The New Bingham Bee-Smoker

the all important tool of the most extensive honey-producers of the world. This illustration shows the remarkable steel-fire grate which such men as Mr. France, Mr. Rauchfuss, the Dadants and others say is the **best** on the market. The Smoke Engine grate has 381 holes for the air and draft, equal to an opening 2 inches square. Buy the large sizes and be pleased. For sale at your dealers or direct. Weight each.

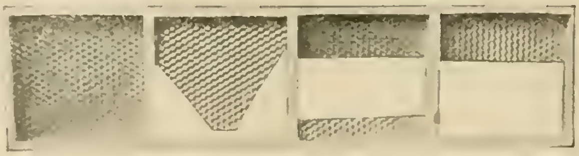
Smoke Engine	4-inch stove....1¾ lbs.		$1.25
Doctor	3½-inch stove..1⅝	"	.85
Two larger sizes in copper, extra		"	.50
Conqueror	3-inch stove.....1½	"	.75
Little Wonder	2½-inch stove...1	"	.50

Two largest sizes with hinged cover.

A. G. WOODMAN COMPANY,
Grand Rapids, Michigan

"Falcon" Hives, Supplies and Foundation

Everything for the BEEKEEPER



"Falcon" Foundation made in the "Falcon" plant at Falconer, N. Y.

SUPPLIES FOR 1914—Take inventory of supplies now and figure what you will need for a slim season. Get them ready at odd times in the winter; and if there is a good season you will have ample time to re-order in April and get them for use. We like to make "Inventory Sales" of "**Falcon**" supplies, for we know that we are dealing with an up-to-date beekeeper.

INVESTMENT—What is the investment of an extra $25.00 in supplies to the loss of 500 pounds of honey? Resolve to change for 1914 and buy "**Falcon**" supplies now.

EARLY-ORDER DISCOUNT—For "**Falcon**" hives and supplies bought now we give an early-order cash discount equal to 12 percent per year. You see it pays for a strictly money basis. Write for early-order discounts, and send list of wants for quotation.

"FALCON" QUALITY—In making our beehives, all of our waste lumber is made into cheap toy building-blocks, so that we are able to put better material in our hives and goods. Get a trial lot this fall so that you can see for yourself, and still have time to order 1914 supplies.

FREE SAMPLES of our famous "**Falcon**" foundation, made in our factory at Falconer, N. Y., cheerfully sent postpaid with copy of catalog, and name of nearest dealer if desired.

FACTORY W. T. FALCONER MFG. CO., - Falconer, N. Y., U. S. A

Where the good bee-hives come from

BUY YOUR HIVES AT MANUFACTURER'S PRICES

The largest manufacturing plant of Cedar Bee-Hives on the Pacific Coast. Cedar is the best and most lasting wood for any climate. The prices for which we are to-day selling these hives is not even approached by any other first class hive made. Get our prices, they will make you smile.

BREW MANUFACTURING COMPANY, Puyallup, Washington

Quality Hill Queens

"The queens you'll eventually buy"

Buy Quality Hill famous utility queens, an excellent honey-gathering strain of light or dark Italians. Breeders selected for color among mothers exceeding average apiary yield. Drone mothers from the highest yielders only. Winter excellently here, and have proven especially resistant to foul brood. All queens reared in full colonies while fed; mated in 4-frame nuclei, which gives large, vigorous and prolific queens. Purity of mating, safe arrival, freedom from disease, and satisfaction guaranteed. Write today for booklet, "A Story of Success."

	May 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12
Untested	$1.00	$5.00	$ 9.00	$ .80	$4.75	$ 8.50
Tested	1.75	9.00	17.00	1.50	8.00	15.00
Select tested	2.75 straight			2.50 straight		

Write for breeders—$4.00 and up.
Reference: Plainfield State Bank.
5 percent discount on dozen orders—delivery after July 1.

QUALITY HILL APIARIES, - - Plainfield, Illinois

We Make a Specialty of Manufacturing

SECTIONS

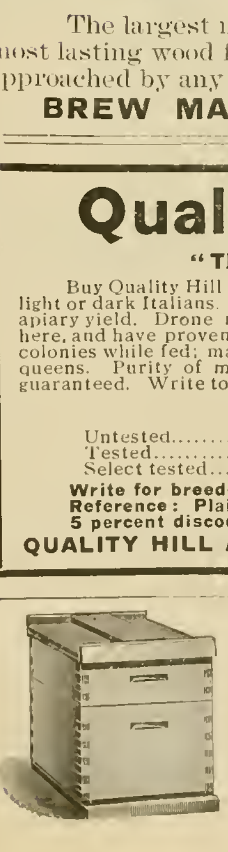
They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

Please mention Am. Bee Journal when writing.



EARLY ORDER DISCOUNTS WILL

Pay You to Buy Bee Supplies Now

29 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.

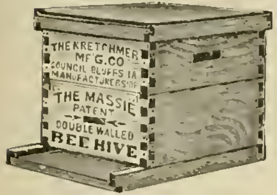
LEAHY MFG. CO., 90 Sixth St., Higginsville, Missouri

LARGEST, BEST

and most complete line of Bee and Poultry Supplies ever seen in Illinois at the lowest living prices. Satisfaction guaranteed or money refunded. Established in 1899. Send for our new catalog. Let us hear from you.

H. S. DUBY & SON, St. Anne, Ill.

The Double-Walled Massie Bee-Hive


THE KRETCHMER MFG.CO COUNCIL BLUFFS IA MANUFACTURERS
THE MASSIE PATENT
DOUBLE WALLED BEE HIVE

THE MASSIE HIVE
For Comb or Extracted Honey

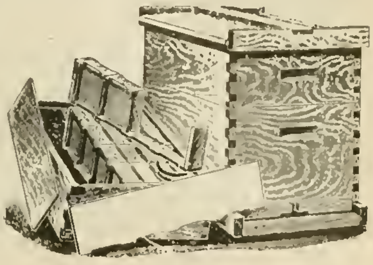
**Surest Protection for Bees—Increased Supply of Honey—
The Best Hive for any Climate**

Furnished in the clearest of lumber in either Cypress, White Pine or Redwood

THE MASSIE VENTILATED BOTTOM

Admits fresh air into the hive, lessening the chance of swarming, and giving renewed energy to the bees.

Fifty years in the bee supply business has shown us that the **MASSIE** is **the very best hive**, and testimonials to this effect are received daily from those who are using this hive.


The Dovetailed Hive.

WHY NOT GIVE US A TRIAL ORDER? **SATISFACTION FULLY GUARANTEED**

We are also extensive manufacturers of **Dovetailed Hives** and **all other Apiarian Supplies.** If you are in the market for supplies, be sure to get our prices before buying elsewhere. We issue a 72-page illustrated catalog which will be mailed to any one upon request.

KRETCHMER MFG. CO., COUNCIL BLUFFS, IOWA

FLAX BOARD

Nearly every Beekeeper in a cold climate has moisture collect on his hive-cover which falls back on the bees and disturbs them very much the same as it would you when cold water falls on you when sleeping.

Flax Board, the best insulating material known, will retain the heat so there will be no condensation. Hives will be warm and dry; no moisture will collect in the dampest cellar or outdoors. We recommend its use under the cover, but it is valuable over the bottom and on the walls of the hives when the bees are outdoors.

We can furnish Flax Board Quilts to fit the top of the hive as follows:

Introductory Price.	**One-half inch thick.**	
8 frame, 13⅞x20	each	$ .10
8 " "	per 100	6.00
10 frame, 16x20	each	$ .11
10 " "	per 100	7.00

Can furnish any size desired.

100 Nicollet Island **MINNESOTA BEE-SUPPLY COMPANY,
Minneapolis, Minnesota**

Root's Goods in Michigan

Our Specialty — The "Root Quality" Bee Supplies to Micnigan Beekeepers Prompt Service in Shipping. We sell at Factory Prices- Beeswax Wanted. Send for 1914 Catalog Showing Our Parcel Post Service.

M. H. Hunt & Son, Dept. A, Lansing, Mich.

BEE - SUPPLIES Send your name for new 1914 catalog out in January. Dept. S., C. C. Clemons Bee Supply Co., Kansas City, Missouri.

CO-OPERATION means **buying right and selling right.** We are a co-operative association, and sell the best Bee-Supplies obtainable at the right prices. It will pay Western Bee-Keepers to send for our Illustrated Catalog.
**Colorado Honey-Producers' Association
Denver, Colorado**

Try My Bright ITALIAN QUEENS

This is what one customer writes:—

JOSEPHINE, TEX., June 16, 1913.
MR. M. BATES, Greenville, Ala.

Dear Sir:—I am sending you $9.00 for which please send me 12 Untested Golden Italian Queens. The queens you sent me are fine, and old bee rearers say they are the finest they ever saw. They have surely made a reputation here for you. Several men say they will order queens soon.

A. M. MORRISON.

I have other letters that say the same. Selected Untested, each $1.00; Tested, each $1.50; 2-frame nuclei, each $2.50. I guarantee safe arrival and perfect satisfaction.

M. BATES, Route 4, Greenville, Ala.

THE A. I. ROOT COMPANY'S
CANADIAN HOUSE
DADANT'S FOUNDATION
Poultry Supplies, Seeds
Write for a Catalog
THE CHAS. E. HOPPER COMPANY
185 Wright Avenue, Toronto, Ont.

W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

BEEKEEPERS' SUPPLIES

Write us for our 64-page catalog. **Free.** Full information given to all inquiries. Let us hear from you. We handle the best of bee-supplies for the beekeeper. Our shipping facilities are good. We cater to parcel post and express orders—none too small nor too large. Beeswax exchanged for supplies or cash. **John Nebel & Son Supply Co., High Hill, Missouri**

Honey Comb and Extracted

We can furnish both comb and extracted honey to beekeepers who have run out of their own product. All our honey is strictly First Class. Italian Bees and Queens in season. Write for prices.
Larshaw Honey Co., Carlisle, Ind.

QUICK SHIPMENT OF QUEENS

of 3-band stock reared for honey-gathering qualities **Untested, June, $1.00. Later, 75c Tested, $1.50. Select tested, $2.** Send your orders now and be assured of having queens when you want them. **R. A. SHULTS, Cosby, Tenn.**

When You Buy

Lewis Beeware

—YOU GET—

Lewis Quality Which means that all Lewis Hives are made out of clear white pine, and Lewis Sections made out of fine white basswood. Material in these goods is the best obtainable, selected by experts.

Lewis Workmanship The Lewis Factory is equipped with the latest improved machinery, constantly watched by experts. The Lewis head mechanic has 36 years of bee-supply experience; the superintendent of bee-hive department, 30 years; the superintendent of sections, 29 years. These and many other skilled men have a hand in all the Lewis goods you buy.

Lewis Packing All Lewis Beeware is carefully and accurately packed—a patent woven wood-and-wire package made only by the Lewis Company is employed largely in packing; this makes the package light, compact and damage-proof.

Lewis Service Years ago all goods were shipped direct from the factory with attending high freight-rates and delays during the honey season; **now** Lewis Beeware can be obtained almost at your own door. Over 30 Distributing Houses carrying Lewis Beeware by the carload, are dotted all over the United States and foreign countries. Write for the name of the one nearest you.

Our New Catalog for 1914 is Now Out. Send for One

G. B. Lewis Company,

Manufacturers of Beeware,

Watertown, - - - Wisconsin

AMERICAN BEE JOURNAL

Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., MARCH, 1914

Vol. LIV.—No. 3

EDITORIAL COMMENTS

A Season's Work

The method of production given by Mr. F. W. Hall, on another page, may not appeal to all producers of extracted honey. Mr. Hall, however, is a large producer who manages a number of out-apiaries, and who harvested some 40,000 pounds of honey in 1913. As will be seen, the gist of his method consists in dequeening during the honey harvest, and avoiding swarming in this way while securing young queens in most of his colonies. The advantage of that method lies in avoiding the nursing of brood at a time when the bees would hatch too late for the first honey crop and too early for the second. The great science of beekeeping is to have the field workers at the right time. Mr. Hall shows us that he understands that. His success should induce us to give full consideration to his system. Of course methods must be varied to suit the conditions of the honey crop in different countries.

Alin Caillas

Mr. Alin Caillas, whose portrait we reproduce in this number, and who also supplies us with a series of articles on honey and its adulteration, is the author of a very interesting little work entitled, "Les Trésors d'une Goutte de Miel" (The treasures in a drop of honey). He is an agricultural engineer, laureate of the National Agricultural Association for a new process of analysis of honey. He has also obtained the "prix d'honneur," a vase of Sèvres china, from the President of the French Republic, for his most extraordinary exhibit of beekeeping, at Avignon in December, 1913. He is making a specialty of honey studies and analysis. We made mention of one of our visits to his chemical laboratory in our September number, page 294. He is the official analyst of the French National Beekeepers' Association, and a young man of great ability.

Comb Honey by Parcel Post

The readers will find in our contributions an article from the pen of Mr. Allen Latham, which we commend to their consideration. But the parcel post will not fulfill its mission properly until perishable and fragile articles may be sent as safely as if carried by the most careful transporting agents.

We must, as a nation, get rid of the idea that all mail matter is to be put into sacks and thrown about like old rags. The nations of Europe have better methods for transporting perishable goods than we have ever used. America is practical and progressive, and must sooner or later do these things *at least as well as the Europeans.* Let us agitate these questions until the riddle is solved. It is not a hard one.

Death of John Phin

John Phin, author of the "Practical Dictionary of Apiculture," 1884, died of pneumonia during the closing days of 1913, at the age of 83, in Patterson, N. J. After retirement from teaching 20 years ago, he attained prominence as a microscopist. He wrote more than 200 books on scientific and other subjects. He was born in Scotland, coming to this country when 21. He retained an interest in beekeeping to the last.

Spraying Fruit Trees

Gleanings in Bee Culture quotes, and we think it worth while to quote also the following from Prof. Surface in the Practical Farmer: "No trees, shrubs, bushes or vines of any kind should ever be sprayed while in bloom. Please tell this to your neighbors. Please tell it to the editors of all the papers. Proclaim it from the housetops. Let everybody learn that, to spray a tree while in bloom, is liable not only to injure the fruit and thus help to destroy the crop, but also kills the bees and other insects that are absolutely essential in carrying pollen from fruit to fruit, and thus help fertilize the blossoms and ensure a crop."

Scent and Queen Introduction

In this number Dr. Bruennich suggests that errors in queen introduction may result from the queens not being marked in an infallible manner. He modestly abstains from telling that he has a most excellent method of marking his queens, which we witnessed when visiting him at Zug. We trust he will fully explain this method to our readers. It not only gives the queen an individual mark, but makes her very conspicuous, so she may be found very easily.

Wintering Bees in Attics

In the February Beekeepers' Review, on the first page, Mr. Pearce criticizes the advice given by the Dadants against wintering bees in rooms and attics, where the temperature varies. He asserts that attics are a grand success as places in which to "keep" bees.

Has not Mr. Pearce misunderstood us? We have no where said that bees might not be *kept* successfully in rooms or attics and wintered there, if not confined to the hive. We warned beginners, and do yet, against the removal of colonies from their summer stands to confine them to any room where the temperature varies, instead of using a cellar or some other repository of uniform temperature. Perhaps we were not explicit enough. Here is what we said:

> "To winter bees indoors, they should be kept at a temperature of 40 to 45 degrees, in quietude and darkness.
>
> "A room or garret, where the temperature varies is a bad place to winter bees."

We do not believe that there is any doubt in the mind of any experienced apiarist about the possibility and advantage of using a room or an attic as a bee house. But very few persons are so situated that they have at their disposal a room or an attic, handy and vacant, where more than two or three hives of bees may be kept. This is the equivalent of a bee house.

Meeting of the National

The National Association had both a beekeepers' meeting and a business meeting at St. Louis, Mo., Feb. 17-18. Thanks to the efficiency of the Missouri delegate, Mr. R. A. Holekamp, a splendid hall had been secured, free of expense, at the Planters Hotel, one of the best in the city.

Some 15 delegates were present from as many States or parts of States. Mr. Tyrrell, the secretary, was not present. Mr. Wesley Foster, appointed in his stead, made a very efficient secretary, *pro tem.*

Lengthy discussions on the policies to be followed brought about a decision to again revise the constitution and incorporate the association under the laws of Missouri. In spite of very pointed differences of opinion among the delegates, a very fraternal spirit prevailed during the session.

The officers elected were: Burton N. Gates, re-elected president; Frank C. Pellett, vice-president; George W. Williams, of Redkey, Ind., secretary and treasurer. These two offices were combined at the suggestion of the retiring treasurer, to simplify work.

The directors elected were: J. M. Buchanan, of Tennessee, re-elcted; E. G. Carr, of New Jersey, and George W. Williams, of Indiana; Messrs. Townsend and Foster holding over.

MISCELLANEOUS NEWS ITEMS

Honey Labels.—We are foiled on getting labels to stick to tin pails. Have put alum in flour paste, but when dry it cracks off. How do you do it?—C. C. MILLER.

We have never had any trouble in getting labels to stick to tin, with ordinary flour paste. We make it fairly thin and use it warm or cold. It gets thicker by standing. Alum is good to preserve it, if you want to keep it from souring or molding. We have kept it in this way a month. We do not think that alum has any influence to keep it from sticking or to make it stick. Thin labels stick best, because they shrink less than heavy ones, when drying. The tin may be at fault, but we could not think what is wrong with it unless it be dusty.

Our own labels stick so well that we have to soak the pail in water, when we want to take the label off. We are very much inclined to think that the only fault in your case comes from too good paper in the labels.

The Langatroth Manuscript.—In our February number we gave copy of manuscript written by L. L. Langstroth on the subject of flour as pollen for bees, offering a prize to the first one who would give the correct interpretation. Out of the first 30 or 40 answers received only 2 were correct, and as these came in the same mail, we are placing both the parties on our mail list for an additional year. The winners were Mr. H. W. Loomis, of Kilbourn, Wis., and Mr. Allen Latham, of Norwichtown, Conn.

We give the correct reading as follows: "Bees to load up flour use their honey to make it knead. When natural pollen comes (it) is moister or they get honey to moisten from blossoms. They will therefore stop on flour even if it was just as good. When frost kills pollen flour used again."—[The word in parenthesis is added by us.—EDITOR.]

The Northern Michigan Meeting.—Mr. Ira D. Bartlett, secretary of the Northern Michigan Association, asks us to announce that an excellent program has been prepared for the meeting in Petoskey on March 10 and 11. Prizes will be offered for the best displays of comb and extracted honey and beeswax. It is the aim of the association to have as large a display as possible. Beekeepers who possibly can should not fail to attend.

The Market for Honey in France.—The following was taken from the Daily Consular and Trade Reports:

"The sale and consumption of honey in France varies, in a great measure, according to the localities or regions in which it is produced. In certain sections of the country it is abundant and easily obtainable; in others there exists so little taste for it that only a few grocers keep it in stock. The French departments producing the greatest quantity of honey are: Côtes-du-Nord, Ile-et-Villaine, Eure-et-Loire, Marne, Cher, Finistère, Var, Loire-Inférieure, Loiret, Aisne, Somme, Corrèze, Morbihan, and Isère. The French colonies of Algeria and Madagascar also produce the article.

"French imports of honey in 1912 net 2,825 metric quintals (metric quintal=220.46 pounds), derived principally from the following countries: United States, 595 quintals; Haiti, 967 quintals; Mexico, 436 quintals; Italy, 180 quintals, Net exports were 11,377 metric quintals, principally to Netherlands, 4,103 quintals; Algeria, 3,316 quintals; Belgium, 1,623 quintals; Germany, 1,480 quintals; and Great Britain, 556 quintals.

"From the foregoing it will be noted that, with the exception of Haiti, France imports more honey from the United States than from any other country, and that almost one-third of the French honey exported is shipped to the Netherlands.

"The price of honey in the French market varies slightly according to the quantity and quality of the season's crop, though the quotations rarely fluctuate to a degree exceeding $1.00 per 100 pounds. The wholesale price for honey at the beginning of January, 1914, in barrels or tin pails containing 25, 59, 100, 150 kilos (55.11, 110.23, 220.46, or 330 69 pounds) is 110 to 120 francs ($21.23 to $23.16) per 100 kilos. Honey at this price, and sold in bulk, is not of a very delicate flavor, nor does it possess the taste which is characteristic of the product of the hive. A considerable better grade, however, can be obtained at 150 francs ($28.95) per 220.46 pounds. The finest quality is sold in tin boxes or cans containing 5 kilos (11.02 pounds) at 1.90 francs ($0.37 per kilo 2.2 pounds). This honey is of grayish color, opaque, and thick in consistency. Transparent, or clarified honey is sold in glass jars containing half a kilo. Its color is similar to golden syrup, but its flavor is inferior to the semi-solidified, or opaque, honey, which is usually sold as "Honey of the Alps."

Judging from the quotations recently communicated to the consulate at

Havre by an American dealer in this article, honey from the United States, or from the Dominican Republic, from which the market draws a large supply, can be shipped to France and sold at a profit at prices much lower than those for the French product.

The United States enjoys the minimum tariff on honey imported into France, and the same tariff also applies to honey coming from the Dominican Republic and Haiti, whether shipped direct from the West Indies or via the United States. The French customs duty (minimum) is $1.75 per 100 pounds net on pure, natural honey, and $2.89 per 100 pounds net on imitation honey, or honey mixed with products containing sugar. The foregoing rates apply to merchandise imported directly to a French port. If imported via another European port or country there is a surtax of $0.3152 per 100 pounds, In making offers to the trade, however. it is unnecessary to quote honey duty paid. Quotations should be made c. i. f. Havre.

Besides the honey prepared for table use, the article is employed extensively by the manufacturers of gingerbread. This is made in large quantities in Lyon, Reims, and Dijon, France, in which cities the United States has consular representatives, from whom names of the principal consumers and buyers can be obtained. [The names of all the importers, as well as those of the wholesale grocers, handling honey in Havre may be had from the Bureau of Foreign and Domestic Commerce.]

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A New Organ for Beekeepers in South Africa.—Some time ago the South African Beekeepers' Journal was discontinued, and for a time the association was without an organ. They have lately arranged with the Farmers' Weekly, of Bloemfontein, to carry a beekeeping department, and to act as their official organ. Mr. S. L. Northcroft, secretary of the association, edits the department.

◆

Death of Major Merriam.—Major G. F. Merriam, who for years was one of the largest beekeepers in southern California, is dead. Mr. Merriam was run down by a street car in Los Angeles, where he has been living for the past few years. The accident occurred on Jan. 24. After lingering for a few days in a hospital, the aged beekeeper succumbed. Mr. Merriam was intimately associated with the older beekeepers of California, being active at the same time as was John Harbison.

◆

The Late Jin Sano.

Jin Sano.—Mr. Jin Sano, whose death was reported in our July issue, and whose picture we here reproduce, was born at Shimokawairi, mura Aiko-gun, Kanagawaken (near Tokyo), Japan.

Mr. Sano's family is one of the richest and oldest, as well as one of the most influential in the county of Aiko, Japan. He was very fond of outdoor sports of all kinds. He admired athletics, was a good fisherman, and a famous shot and hunter. A few years ago some complications set in, affecting his spine, and after spending many months in the University Medical Hospital at Tokyo, he returned home in a weak and unhealthy condition. He took up beekeeping to keep himself busy, and in spite of a few unsatisfactory experiments, he became more interested in the subject, and decided to make a complete study of it. Only modern methods were to be used.

He came to the United States for the purpose of spending two years with beekeepers, and also to continue his studies of bees and learn more of the present methods. On account of his weakened condition, he was not able to carry this plan through, and reluctantly returned to Japan. He read bee lore with much satisfaction, and was on the lookout for anything that would aid him in learning about the habits as well as the improvements of his bees and stock.

His keen sense of learning and his close application to the needs and requirements of each hive, soon gave him a practical knowledge, while the bees responded with their usual adaptness to any assistance given them, and rewarded him accordingly.

Mr. Sano was only 27 years old. Through his death Japan has lost a valued citizen, the beekeepers, especially those who were in touch with him, an earnest worker.

Mr. Noborn Sano has taken up his brother's apiary, and we trust he will be able to push forward into the bee business and fulfill the advances made by his deceased brother.

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Not Foul Brood in South Africa but Bee Pirates.—In South Africa there is no foul brood. At least that is the report of Mr. Northcroft in the Farmers' Weekly. In order to keep out this dreaded pest, the beekeepers have succeeded in having passed a law which prohibits the importation of any honey whatever. Nor can beeswax and comb foundation be shipped into the country under the same regulation. They, therefore, feel themselves very safe.

Yet South Africa cannot be considered a modern Utopia in the beekeeping line in spite of the absence of foul brood. Thirty pounds of honey per colony is considered a good harvest, but this is in part made up by the fact that the price of honey ranges from 20 to 30 cents per pound.

Then they have bee pirates. Probably some of our readers have never heard of these insects which were described in our April number for 1913. It seems that there are only two ways to get rid of these pests. One is to catch each individual insect with a butterfly net; the other is to place water covered with paraffin in a white dish in front of each hive. The pirate is attracted not by the water but by the white spot.

The following on bee pirates by G. S. Oettle, in the South African Poultry Magazine for November, may be of interest:

"These pests are hard at work, and we wish that an easier method of extermination were available than that at present in force. If you realize what a devastating effect the presence of these insects has upon colonies, you will appreciate these lines. Last week we found no less than three hives decimated by the attacks of these insects. We sat for 20 minutes in front of another and counted no less than 27 bees carried away by pirates. This number does not include those caught in the grass which surrounded the hive. One significant thing we noticed and that was that the pirate seemed afraid or unable to tackle the bees while they remain stationary or ran about on the alighting-board. It was heart rendering to see how the pirates enticed the bees into the air to their destruction.

"The 'saucer' remedy is voted a success by some and a failure by others, a great deal depending upon the actual position of the saucer containing the water covered with paraffin. One method of relief, however, has been proved a moderate success, and that is to darken the entrance of a hive by providing a shade-board not more than 2 inches above the entrance and making it extend at least 8 inches in front of the alighting-board of the hive. The entrance-board should be about the same width, but rather narrower so that the bees can fly in and out from a more or less shaded place.

"Experience has shown that the attacks of the pirates are usually at those times of the day when the sun is shining brightly and casting deep shadows, and it has been proved that these insects avoid shadows as much as possible. The bees by this method do get a chance. I should be glad if other beekeepers would make a trial of this method of protecting their bees from the onslaughts of these enemies to the industry."

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Death of F. B. Cavanagh.—We regret to have to inform our readers of the sudden death of F. B. Cavanagh, which occurred at Hebron, Ind., on Feb. 12. Mr. Cavanagh operated over 500 colonies of bees, and was a wide-awake bee-keeper. He was yet a very young man, advancing rapidly in his chosen profession. He was a director of the National Beekeepers' Association, and had been chosen by the Chicago-Northwestern Beekeepers' Association as delegate to the National convention, recently held in St. Louis. Our sympathy goes to the bereaved wife.

◆

Correspondence Course in Beekeeping.—The College of Agriculture of the University of California, located at Berkeley, announces a correspondence course in beekeeping to be known as Course 15, open to applicants any time after Feb. 15, 1914. Following is a description of the course as given in the College Circular No. 113, prepared by C. W. Woodworth, Professor of Entomology:

"It is the aim of this course to cover actual work with bees, giving directions whereby students can discover by observation the significant facts regarding the structure, habits and life-history of bees, and particularly those facts most related to the production of honey. The course is a practical one, dealing with the production of both extracted and comb honey. The student should learn from it enough to enable him to handle bees intelligently. The aim is to have the student actually study the bees, rather than study about them."

Any one interested in taking this matter up should write to the Division of Agricultural Education for registration blank and copy of the circular.

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Second Annual Report of the Iowa State Bee Inspector.—The second annual report of the Iowa State Bee Inspector for 1913 is ready for distribution. Copies may be obtained by those interested by addressing the inspector, Mr. Frank C. Pellett, of Atlantic, Iowa. The report gives a mass of very reliable and interesting information which should be in the hands of every Iowa beekeeper at least. We can give but a short summary:

According to the last census of the United States, Iowa was fifth in point of value of bees on farms; other States with greater value ranking in the order named: California, Texas, Missouri, and New York. When area is taken into consideration, however, only one State, New York, shows greater value of bees.

An annual appropriation of $2000 has been provided for inspection work in Iowa. This, as a matter of course, is insufficient to permit of thorough inspection. The efficient inspector believes that the greatest good can be accomplished by extensive educational work through the State college, and by answering correspondence of beekeepers who require assistance. The office of bee inspector has been given as wide publicity as possible through the papers of the State, with the result that a large amount of correspondence is carried on directly with the beekeepers.

Mr. Pellett, with two assistants, has also been in the field inspecting wherever possible, attending to the most urgent calls first. The following is the result of the personal visitation of the three inspectors:

Apiaries in which disease was found...	140
Apiaries visited	311
Total number of colonies	6,973
Number of diseased colonies	483
Number treated by inspectors	52
Number destroyed	32

A considerable portion of the whole number of 483 diseased colonies have been treated by the owners under direction of the inspectors. A number were also destroyed by the owners.

This is followed by a summary of the laws in Iowa, applying to bees and bee-diseases; a description of the dis-

Herman Rauchfuss and Son in the "Big Snow."

eases which threaten bees, the sources of contagion, and the methods of treatment combined with large pictures of foul brood and mothy combs, and a map of the State of Iowa, showing in what counties the diseases are prevalent. There is also a list of Government, State, and other publications pertaining to bees with the places of publication, etc.

The second part of the book is devoted to papers read at the meeting of the Iowa association held in Des Moines in December; a brief summary of which was given in our last number. Any one interested in sweet clover should not fail to read the article, "Instructions for Sweet Clover Growing," by Frank Coverdale, one of the best known authorities on this subject.

Other subjects treated are "Treatment of Disease," "Helps and Hindrances in Dealing with Foul Brood," "Advertising," "Marketing the Crop," "Selling Honey Direct to Consumers," "A Season's Work," "Making Increase," "Exhibits," "Increasing the Consumption of Honey," "Report of the Secretary," "Comb or Extracted Honey?" and the "Beekeepers' Legal Status."

If you want to be imbued with genuine beekeeping inspiration, do not fail to read the article by Hamlin B. Miller entitled, "Beekeeping as a Side-line and the Fun of the Thing;" a small extract from which appears in Miss Wilson's Department in this number.

Colorado's "Big Snow."—You might be interested in the way some of our beekeepers had to do soon after the "Big Snow" that we had on Dec. 4, 5, and 6, 1913, when we had a snowfall of 47 inches, which was followed later by a snowfall of 10 inches, making it impossible to get about the country excepting on snow shoes and skis. The bees being buried under such a great quantity of snow, in some places having stores which made it rather doubtful whether they would get through the winter satisfactorily unless they had an opportunity for frequent flying, it was thought to be necessary to shovel them out and give them an opportunity to fly as soon as the weather turned mild.

The two pictures represent Herman Rauchfuss and his eldest son, Frank, going to their out apiaries on skis, for the purpose of digging out their bees. They are pulling a sled along carrying their tools and overcoats. This was rather a novel experience to all of us. Now most of the snow has disappeared and the bees do not seem any the worse for it. Frank Rauchfuss.

Going to the Apiary on Skis.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Ventilating Comb-Honey Supers

On page 30, Bell Bros. say: "If we ventilated our comb-honey supers we would have all short-weight sections." One wonders whether that opinion is based on actual experience or upon mere supposition. At any rate we know from actual experience here that with 5 or 10 times as much ventilation as given by Bell Bros. with their $\frac{3}{8}$-inch entrance we have well filled sections. No doubt the statement by Bell Bros. that "the cause of the bees finishing the outside of the super before the inside is the heat" is correct. In other words the heat is so great that there is delay in finishing the central sections. If, now, we should close down the ventilation, making the heat still greater, would it not make matters worse? So long as ventilation gives us a crop so satisfactory in quantity and quality as the crop of 1913, we are not likely to ventilate less.

How His Wife Helped Him

Beekeepers do not always give full credit for the help they have from their wives. Hamlin B. Miller is an exception. In a paper by him published in the report of the State Bee Inspector of Iowa, he says:

"Now while clipping these queens, my wife as usual got busy helping (?). I set a cover loaded with bees against the fence behind the hives. She took a seat on a pile of bricks near by, close by the cover, with her dress comfortably spread out. Bees, I have discovered (and so has my wife) always travel up and not down. It was not very long until I heard a cry of surprise: 'I'm stung.' Well, she was, too. Infection set in, and after the physician had discontinued his attentions, *I* was stung—for $6.50. The super of honey I took off at that time sold for $6.00. The doctor overshot the mark just 50 cents, but he succeeded in getting it all for that time. But in spite of her many experiences, she still persists in running out every time I monkey with those bees, and makes me as much bother to keep her off the job as any 'fool bee' that ever endeavored to attract all my attention."

Recipes from a Subscriber

NEW ENGLAND DOUGHNUTS.

One cup full of honey, one cup of milk or water, one teaspoonful of salt, three level teaspoons of Royal baking powder and a sifting of nutmeg. (They can be made with sour milk and soda equally well.) I do not use a cutter, for then so much of the dough must be handled over, I mix it fairly hard so as to roll it well, and then cut with a knife into about four strips, and take each strip and cut off inch strips and make either twisters or rings by bringing the ends together. Have them all made out before commencing to fry.

FOR A COLD JUST COMING ON.

One tablespoonful of honey in a cup of hot water, with a sprinkling of cayenne pepper just before going to bed.

It is a successful remedy, as we and our neighbors can testify. One of our neighbors has a boy, and she never allows him to have sugar in any form, but honey in the place of it. He is a fine lusty, bright eyed boy of 10 months.

Arden, Neb. Emma S. Mills.

Your neighbor is a wise mother. If more mothers knew the value of honey as compared with sugar, it would be better for their children. That lusty bright-eyed youngster is in company with Dr. Miller, for he makes a practice of using honey in place of sugar in *all* hot drinks.

A Foul-Broody Apiary—Catching Swarms With Traps

I am enclosing a view of an apiary where foul brood is said to be; another of "a boy's beginning." He commenced with one colony and is catching more swarms from buildings with traps. I helped him one day get three swarms, the first one on a walnut tree. I had six combs. The second was in the roof over some blooded horses, and the owners had a time until we got the bees away. The third was in a barrel a man had bought. Before he could use it the bees had gone into the bung-hole. The barrel stood by the kitchen door.

Where They Have Foul Brood.

Goleta, Calif. (Mrs.) Lucy Sexton.

That picture, "Where they have foul brood," with surroundings all grown up with weeds, looks like a favorable place for the disease, where it is not likely to be interfered with until it has completed its deadly work.

* * *

A Successful Lady Beekeeper

Under this title, Geo. W. Williams, the man who shakes bees to make them work, says in the Beekeepers' Review:

"It remains for a little energetic lady to show us how to do it successfully, secure a good crop of honey every year, and to winter with practically no loss whatever, winter after winter. In fact, if she loses more than one it almost breaks her heart. Frequently she goes through two successive winters without losing a single colony.

"I am going to call her Mrs. Smith, as that is not her name and will do as well as any other. She lives in town, and like the roseate 'ads' we are seeing less of lately, she keeps her birds all on one city lot. She has about 100 colonies, spring count, and she uses 100 more hives in her system.

"She clips all her queens in the spring, thereby 'shaking up' the colony and inducing prolific brood-rearing. She allows her colonies to swarm naturally. (I am not defending this part of her system, but she does it successfully.) She hives the swarm on the old stand and moves the old hive a little to one side, with the entrance turned slightly away.

"All the supers are placed on at the proper time, and the old colony is allowed to rear a young queen if the stock is satisfactory, and if not it is supplied with a virgin or a cell from good stock. When this queen begins laying, supers are given as required, and all the honey possible is secured from both colonies in the ordinary manner.

"When the supers are all off, and before cold weather sets in, the two colonies are united by shaking them together, after removing the old queen, which is readily found by reason of having been clipped, and all the honey crammed into the one hive, leaving only one comb in the center, partly empty, for brood rearing.

"The shaking again stimulates brood-rearing, and by winter a fine colony of young bees are ready for their long nap. (In uniting bees by shaking, she has found that it can be done successfully, even in a dearth, if frames are shaken alternately from each hive and the whole manipulation is performed late in the evening, so that the bees get acquainted before morning.) She winters her colonies outdoors with hay cushions over the colonies."

A Boy's Start in Bees.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Comb vs. Extracted Honey

Many beekeepers are "on the fence" as to what kind of honey to produce. It is not so hard for the beekeeper who is increasing his business to decide, for he is buying supplies right along and can use his discretion.

But the beekeeper who has all the bees he wants and equipment necessary, does not know whether to make the change. This of course is a question every beekeeper can best decide for himself. But in the way of throwing light on the subject, let me say that if all the surplus honey is of good body, flavor, color, etc., and very slow to granulate, it would be more profitable to produce extracted honey because such an article would be best thus put on the market. But if the honey is a little off in body, flavor or color, it would be best to put it on the market in the comb, for it would keep better in this form, and the taste and color of it would not be as objectionable to the consumers as if it were extracted and if sold in that way.

Extracted honey has become so well known that it will sell as well as comb honey on most markets. From the standpoint of labor and investment, it is best to produce extracted honey when, as stated above, the article justifies. This has been my experience and that of Mr. T. W. Livingston, of Leslie, Ga., who has had much experience in producing honey in both North and South. He says he can make more money producing extracted honey at 6 cents per pound than comb at 10 or 11 cents. But the honey he produces is of extra fine quality.

* * *

The Price of Supplies

The prices of raw material suitable for making our supplies has advanced considerably in the last year, as has also the price of labor, etc., and as a natural consequence the prices had to be raised on the finished article.

Many beekeepers will think that the prices are too high, and on this account will reduce their orders for the season. I don't think this should be the case. Beekeepers should go right on expanding their business in the usual way, for supplies will never be any cheaper, and bees are increasing in value each year, and the demand for them is growing. But this rise in the price of supplies hits the comb-honey producer the heaviest blow, because so much of his supplies consist of sections, shipping-cases, etc., which go with the crop of honey; while the chunk-honey and extracted-honey producer retains his supplies and the cost of suitable retainers for the marketing of such honey is the only added expense.

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Wants to Start Right

Mr. Wilder:—I am a beginner in beekeeping, and want to start right and produce comb honey for home use and for local market. Any suggestions will be greatly appreciated.

Baldwin, Ga. Gresham Duckett.

Answer.—I would produce chunk honey, using the regular shallow extracting supers for storing room, and the regular 8-frame dovetailed one-story hives for brood-chambers, and would order not less than two supers for each colony. Three is better than one. Use full sheets of foundation in the frames in the supers, and 1-inch starters in the frames in the brood-chambers as long as you practice natural swarming, but use full sheets when you resort to artificial swarming. It would be best to use queen-excluders between super and brood-chamber in order to keep the queens below so the new combs above will not be soiled by brood-rearing. You must have your honey as attractive as possible in order to sell it and obtain the best prices.

You can sell the honey in frames and let the weight of the frames go in as honey. Or if your customers care to return them, you can allow them the same price per pound as you charged for the honey. Having plenty of supers, I would remove honey only as I sold it during the winter months.

In the busy season watch the supers, and as soon as the bees get the super next to the brood-chamber about one-third full, raise it and place an empty one beneath. In this way you will supply the bees with plenty of storing room, and many times you will get two supers filled as quickly as one. Start selling new honey as soon as any frames are well filled and capped over.

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The Brood-Nest

Just at this time of the year the brood-nest of the colony is a very important factor to the beekeeper, and should be examined as soon as the first warm day comes. See what the conditions are, and give the attention needed.

When bees are allowed to dwindle in the fall, during winter they cluster up in the supers where there may be a little honey. Sometimes they cluster in empty combs left in supers, carry honey up from below, and, as a natural consequence, start rearing brood in the super, totally ignoring the brood-chamber. Medium sized colonies will do this occasionally; the brood-nest may be divided with part of the brood below and part above. In such cases the super containing the brood should be placed under the brood-chamber. The queen will then go above as soon as she gets very active; this super can be removed later.

In cases where bees are run for extracted honey solely, with full-depth frames in the supers, and where they have established their brood-nest above, all the combs of brood thus occupied should be moved below or the bodies interchanged. Keep the queen below until she has the body of the hive filled with brood. She can be allowed to go above later if so desired.

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The Prevailing Prices of Honey

Honey has not risen in price as it should along with other articles of food. If such had been the case, beekeeping would be on a much better financial basis today. No one is responsible for this but the beekeeper. Now that the prices of bee-supplies have advanced so much, we should raise prices this coming season. I am in hopes the price will advance not less than 2 or 2½ cents per pound. If there is some general understanding about prices among us, and especially those who are great producers, there will surely be a change in our favor. For with the lack of this understanding, we will not have uniform price. Let the slogan of better prices for our honey this season spread as far as possible from beekeeper to beekeeper.

As I traveled from city to city last season selling honey, I found nice comb honey that was sold and delivered by the producer for less than 8 cents per section, and small shipments made. Lots of it was shipped over 500 miles, and it was packed in nice shipping-cases and carriers. It was retailing at less than I was offering mine at to jobbers. I held to my price and sold all I produced. Brother beekeeper, let us line up on this point of market.

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Losses to Beekeepers Through Floods

It is with regret that we learned of so much loss to beekeepers in Texas from floods. Among those mentioned is Mr. Polk, of Belton, who not only lost his bees but his family as well. Mr. Scholl, of New Braunfels, lost heavily. Several of his apiaries, together with supplies, etc., were swept away by the water.

I am sure all beekeepers join me in extending sympathy to all who have sustained losses. Editor Root, in commenting, says: "When we read the telegraphic reports of the floods in Texas, we wondered how our bees on the Apalachicola river would fare, because they are on platforms, but slightly above high water level. Fortunately, however, the floods did not visit that section." Fortunate it is for many of us that they did not, for there are many bees in this section similarly situated.

The Texas flood should be an example for us. I have seen hundreds of colonies in the swamps of the Apalachicola, supported by frail scaffolds, and barely above high water mark.

Mr. R. W. Herlong, of Ft. White, Fla., some years ago located an apiary in a low district which was supposed to have been a pond at one time, although water had never been known to collect there to any extent. Some time after the bees were located a flood came, the pond was filled, and the bees were destroyed before they could be moved, although the hives, etc., were intact when the water subsided. We cannot have our apiaries placed *too* safely

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Altitude and the Alfalfa Honey Crop

Is it possible that alfalfa in high altitudes does not yield nectar? What is the cause of the poor yields of alfalfa?
—A Subscriber.

There is no doubt that alfalfa yields less nectar at an altitude of 8000 feet than it does at 4000 to 6000 feet. The San Luis valley is an example of this. This valley lies at an altitude of 7000 to 8000 feet, I believe, and while alfalfa and sweet clover grow very well, the beekeeping industry has never cut much of a figure there, although there are some bees kept. Another district comes to mind, and that is the upper Arkansas valley around Salida, Colo. Large fields of alfalfa are grown, but bees are not kept there by any one in a commercial way, as is true in the lower end of the valley, from Pueblo to the Kansas line.

There is no evidence that I know of that would give ground for the belief that altitude has anything to do with it except as altitude affects the temperature. The nights are often cold and frosty, and the days do not get so warm in the higher valleys and mountain parks as is the rule in the lower valleys.

It may be set down almost as a rule that the West that depends upon alfalfa and sweet clover for surplus honey has its largest crops when the season is hottest with abundant water for irrigation, and two to three good rains in July and August to put new life into the sweet clover growing beside the roads and in waste places inaccessible to irrigation water.

I have had considerable experience

Mr. Oliver B. Finn, of Silt, Colo., Disinfecting a Hive-Body with a Blow Torch
Mr. J. H. Gardner, County Apiary Inspector, standing.

with failures of the honey crop from alfalfa and sweet clover. Sweet clover may be depended upon more than alfalfa. We are finding out more every year it has less enemies and will withstand drouth better. Alfalfa seed crops and honey crops as well have been destroyed by thrips, very small insects that live upon the pollen and delicate parts of the flower. Some seasons they become so thick in the blossoms that they destroy the reproductive organs of the flower, and of course the flower can secrete no nectar when the delicate flower parts are being devastated by a hungry hord of 40 or 50 little critters called thrips. I have shaken 40 or 50 of these little mites from a single alfalfa blossom. The alfalfa at the time was in nearly full bloom, and still the bees were scarcely making a living, and could be easily induced to rob. A farmer living near the field where I found so many of the thrips, was trying to raise some seed from a special variety of alfalfa, and his endeavor failed, probably on account of the prevalence of the thrips.

Grasshoppers, when numerous enough eat off the tender leaves and blossoms, and some years cut down very materially the yield of alfalfa honey. Grasshoppers will not eat sweet clover until after most of the alfalfa within reach has been first consumed. Like cattle and horses they have been starved to it.

There are probably a score of causes affecting the yield of alfalfa honey among which I might mention too much pasturage, winter and spring freezing, too much water or too little, the forming of a "water table" 6 to 10 feet, more or less below the surface of the ground by irrigation farther up on higher ground. This has been given as the cause of the failure in alfalfa seed growing in the Arkansas valley. The alfalfa roots reach down to the water table, and the plants get too much water for seed production. Seed production seems to depend upon a withholding of moisture at the right time to stunt the growth and turn the the thoughts of the plant to reproducing its kind before it dies of drouth. The causes producing abundant crops of seed also seem very favorable to honey production. When the seed crop is good the honey crop is good. When the honey crop is good the alfalfa seed crop may be good and it may not.

I have mentioned spring freezing, and in my opinion there is nothing so disastrous to alfalfa honey secretion as a late spring freeze that freezes the young plant when it has attained a growth of a few inches to a foot.

As to alfalfa plants exuding a sap or giving off a secretion similar to honeydew, I never saw any of it, nor heard of it before. It would not be very difficult to find this out by observation if there ever is such a thing as alfalfa plants furnishing a honey-dew.

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

Bees, Poultry, and Fruit

I have always advocated specialization in any line of work, when this can be done advantageously. I believe in applying it to beekeeping. Instead of keeping more bees only, as has been advocated for many years, I believe in keeping better bees and keeping them better. But not every beekeeper is so favorably located as to put extensive beekeeping into practice. Therefore it becomes necessary in such instances to combine something else with it in order that profitable employment may be provided.

COMBINED WITH POULTRY.

Engaging in poultry raising as a lucrative business in addition to beekeeping has been mentioned before by me. As a "hobby" this side-line has proved profitable enough, and from the experience I have had, better results and greater profits might have been obtained if a little more care and timely attention had been given the flocks. When considered as a business proposition this becomes absolutely necessary, as the fowls must pay returns on the investment. Too often beekeepers are insufficiently informed, and in many instances unpractical in their work with poultry.

The construction of simple but serviceable poultry houses and other necessary appliances is too much overlooked. A very common mistake is that of investing too much in unnecessarily expensive and cumbersome buildings in which to house small flocks of birds. The interest and profits on the investment cannot be obtained from the building and the equipment, but must come from the poultry kept. Instead of putting $30 to $50 in a poultry house, and $10 or $20 in chickens, I should reverse these figures, and invest in more and better poultry, and keep them in simple and cheaply constructed but serviceable houses. Especially applicable is this to the South.

PURE-BRED POULTRY BEST.

Another mistake frequently made is that of trying to get good results with "scrub chickens." I do not believe in mongrels, especially in poultry. Take a look at a lot of chickens of all colors, some "spotted," "brindle," and "striped" ones, a few yellow, red, black, and white birds. Then place these besides a flock of pure-bred fowls and notice the difference. Nothing appeals to me more than such a flock on a rich green lawn or a green range especially provided. The owner of such not only takes greater pride in them, but gives them more care and attention and gets better results. The advantages of keeping pure-bred stock and being able to obtain larger profits for eggs and stock are so much greater that it is a wonder mongrel chickens are tolerated.

ADD FRUIT ALSO.

The combination is hardly complete unless fruit growing is included. The small beekeeper who cannot engage in extensive beekeeping should so locate that a combination of these three, bees, poultry, and fruit may be kept profitably.

POULTRY IN THE ORCHARD.

The scratching hen is the laying hen as a rule, and such a one is of untold value in the orchard. Thousands of destructive insect pests can be destroyed by keeping fowls in the orchard. Besides, hen-house fertilizers are exceedingly valuable. They are scattered throughout the orchard while the birds have the range of the ground, and it is very little trouble to spread the hen-house cleanings in a proper manner also.

When arranging the orchard and the poultry houses and runs, these should be so provided that the fowls may be excluded during the ripening of fruit.

It is not wise to crowd too many birds into one house, and better results may be obtained by having smaller colony houses located throughout the orchard, so that the entire number of fowls kept may be divided into small flocks. It is not really necessary to separate the flocks by fences, although it is better. Besides giving better results this affords a better distribution of the birds over the orchard, and prevents the spreading of contagious diseases among all the fowls if an outbreak should occur in any one of the flocks.

In a medium-sized orchard the houses may be arranged close together near the center, with the poultry runs diverging from the central location. With the feed house in the center very little time is required to attend to the fowls properly.

Horsemint and wild bloom made the desert beautiful last summer. We had more rain than was common.

THEY DO NOT INTERFERE.

The fact that poultry can be attended to early in the morning and in the evening with the proper equipment, and that the orchard requires attention only at certain times, leaves plenty of time to give the bees the best attention. When the beekeeper goes out to deliver honey, he can take along some eggs and poultry, or fruit of some kind, and return home with just that much more cash "to jingle" and feel merry over.

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

A Hard Cold Spell

Up to Feb. 9, this winter was milder than the average here, but since then we have had weather direct from the North Pole. Monday, Feb. 8, it was zero; Tuesday, 8 degrees below; Wednesday, 16 below; Thursday, 25 below; Friday, 10 below; and this morning, Saturday, 14th, zero. Every day we have a stiff wind besides. It is the coldest week I have ever experienced. These are the days that go hard with bees out-of-doors, especially if the "winter nest" is as large as some would have it. With a narrow rim of honey over the bees, stores become exhausted, the bees are unable to move the cluster, and they either die outright or gorge themselves with pollen and die with dysentery later.

There is very little snow around the hives, and I have been wishing they were covered entirely. The snow we have is covered with a hard crust; I could not shovel it around the hives or I would have done so. However, bees can stand wonderful extremes of temperature, and wherever they have abundance of good stores in the hive, I think they will winter all right unless the present arctic weather continues too long. But it is milder today, and a change is near, no doubt.

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The Iowa and New York Reports

Those are splendid photographs on the cover page of the February issue, and are valuable from an educational standpoint. The depressed cappings are shown so clearly, and other general characteristics of American foul brood so apparent that a greenhorn should be able to diagnose foul brood if he has a text book and pictures like that. I think it is the best photograph of foul-brood combs I have seen, and any beekeeper who is not familiar with this disease should keep the picture handy for reference.

I am indebted to some one for a copy of the annual report of the Iowa Foul Brood Inspector. These same photographs are shown there. Some time ago I also received a copy of "The Honey Bee," a bulletin issued by New York State, and edited by our friend W. D. Wright. It is a splendid work, the best in that line I have ever known to be issued by a State Department of Agriculture. Although somewhat tardy in acknowledging this booklet, my thanks are none the less sincere.

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Answer to Dr. Miller

On page 43 of the February issue, Dr. Miller seems to think that I infer that he has a better location for beekeeping than we have. No, Doctor, one year with another I do not think so, but every once in a while I notice that your honey flow will last for seven or eight weeks at a stretch, something I never knew here in Ontario from any *one* source. Clover rarely yields over four weeks in succession; in fact, in our immediate locality I never knew it to last that long. This past season was the longest in my experience, and it did not extend over that length of time, although in some sections of Ontario it did on account of more rain. Don't think for a moment, Doctor, that I am at all envious, for next to myself I can think of no one I would sooner see get a bumper crop than yourself. As to the "woman in the case," I accept all you say with this amendment: Instead of narrowing it to a "full-blooded Scotchwoman," include "German Canadians. Come to think of it, I know of a lot of women hustlers here in Ontario who are at least "half of the game" in producing the crops of honey, and for fear all have not German blood in their veins, I will insist that all "Canadians" be included when giving honor to the work done by the ladies.

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Changeable Weather in March

March is the month that gives us many changes of weather. Some of these changes are not pleasant, but I doubt if any other month gives us more real pleasure—pleasure being derived from *anticipation*. Bees wintered outdoors generally have their first flights, and how interested we are in seeing their condition. The first birds arrive from the South, and the notes of the robin, the harbinger of spring, is sweeter than any music for months past

The ice in the rivers breaks up, and the grass begins to show on sheltered banks facing south—all these signs tell us that summer is coming, reminding us of the promise that as long as the earth stands, seedtime and harvest, summer and winter shall not fail. Little real work is to be done in the apiary in Ontario, and anticipation occupies our minds more than at other seasons of the year. Some years the weather is warm enough to allow scraping of combs, etc., but, as a rule, we have to wait until April to work comfortably in unheated buildings.

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Why So Many Swarms?

A subscriber from California states, on page 61, that he has in one season presumably caught 60 swarms by putting out boxes in the trees for the bees to go into. This indicates one of many things, careless beekeepers, abundance of wild bees in the rocks, etc., and other reasons that might be mentioned. What is the correct solution?

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Wintering Out-of-doors

In February notes I mentioned having received a letter from a friend in Ohio under date of Jan. 7, which stated that they had 30 inches of snow. At that time we had but a few inches, and up to the present time we have had only a light snow fall. Under date of Feb. 7, this same friend writes that the snow is all gone and the bees have been flying freely for a week; in fact, it was so warm that robbing was attempted. Under such conditions one wonders why cellar wintering should ever be thought of. Surely, it must be easy to winter outdoors where bees are certain of cleansing flights in mid-winter. Or is there a possibility that the bees winter better outdoors in a locality where no days are warm enough for a mid-winter flight?

CONVENTION PROCEEDINGS

The Washington Meeting

The beekeepers of Washington State held their 20th annual convention at North Yakima on Jan. 7 and 8. It was the best meeting in the history of the association in the following ways: Numbers, enthusiasm, educational points, and good fellowship. The enthusiasm was at a high pitch all the time. Every paper and talk *felt* instructive, and every one had a brotherly feeling for every one else.

Among the visitors from outside the State were Mr., Mrs., and Miss Espy, of Iowa. Mr. Espy gave a talk on short methods of curing foul brood, which was well received. Mrs. Espy spoke on the subject, "Why women should be beekeepers."

Mr. Anson White told how he increased from 4 colonies to 29 and harvested 730 pounds of extracted honey. He believes in leaving a large supply of winter stores. Mr. White and Leigh Freeman, editor of Northwest Farm and Home, are the only remaining charter members of our organization.

All of the papers were full of wholesome instruction and created discussion, especially when the care of alfalfa and sweet clover was mentioned. In all, over 100 people attended. There were 80 at the banquet held the second day. The following officers were elected for 1914: E. E. Starkey, president; L. G. Simmons, vice-president; Gus. Sipp, treasurer; J. B. Ramage, secretary.

The president, secretary, and C. W. Higgins were appointed Legislative Committee to draft a foul-brood law to be presented to the next legislature, and to urge the passage before the members.

When the convention adjourned, the happiest *bunch* of beekeepers separated that it has been my lot to be associated with.
J. B. Ramage, *Sec.*
North Yakima, Wash.

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Tennessee Beekeepers Meet

The 8th annual meeting of the Tennessee Beekeepers' Association was held at Nashville on Jan. 30, 1914, President J. M. Davis presiding. The president, in his opening address, urged increased energy in getting more members for the association, and suggested field meets during the summer to create added interest.

Dr. J. S. Ward, of Nashville, read a paper by his brother, Mr. Porter C. Ward, on "General Farming and Beekeeping Combined." Mr. Ward produced 10,000 pounds of honey in connection with his farm work during 1913 with but little help except during extracting time.

Mr. Ward's paper was followed by an address by Mr. L. F. Watkins on "Fancy Comb Honey in Spite of Foul Brood." Mr. T. J. Ayers and Sandy Ellis discussed the subject of control of swarming.

Dr. J. S. Ward gave a very interesting account of his experiences with foul brood as an inspector. He stated that it was surprising to note the number of colonies still kept in box-hives throughout the State. These, naturally, give but little surplus, and are the breeding place for foul brood.

If the box-hive could be eliminated it would mean a great gain for beekeeping, as it would not only help check the ravages of foul brood, but it would increase the output of honey on account of the added number of colonies in movable-frame hives.

A great deal of discussion was provoked on the general subjects of "Wintering Bees" and the "Marketing of Honey."

The following officers were elected for the ensuing year: T. J. Ayers, president; W. B. Romine, vice-president; J. M. Buchanan, secretary-treasurer. Mr. J. S. Ward and J. M. Buchanan were elected delegates to the National meeting in St. Louis.

South Dakota Convention Meets

The convention of the South Dakota Beekeepers' Association was held at Vermilion Jan. 21, 1914, and was a most successful meeting.

The following program was carried out, each number being freely discussed by the members present, and good feeling prevailed:

"Bees on the farm," by Geo. F. Webster, of Sioux Falls.

"Experiences and expenses of marketing honey," by W. P. Southworth, of Sioux City.

"Producing big crops of comb honey," by F. A. Dahl, of Gayville.

"Feeding sweet clover green and dry to stock." by T. M. Goddard.

"Treating foul brood," by Dr. E. A. Morgan.

"Does it pay to keep bees?" by Pres. R. A. Morgan.

"Extracted honey," Wintering bees," "Split sections," "Chaff hives," etc., were discussed.

It was decided to hold a picnic next summer at either Vermilion or Gayville; time and place to be decided by the president and secretary.

The next annual convention is to be at Vermilion early in December.

By a unanimous vote, the present officers were re-elected. R. A. Morgan, of Vermilion, president, and L. A. Syverud, of Canton, secretary and treasurer.

NOTES FROM ABROAD

Our Visit in Burgundy

BY C. P. DADANT.

THE PART of our trip which I am about to describe has already been mentioned in the September number. But there is plenty left to tell.

MR. CHAMPION, OF FRANCE.

We reached the home of the president of the Burgundy Beekeepers' Association, Mr. Champion, on July 23, just one month after leaving home. A most hearty reception was awaiting us. The reader may have a slight idea of the good taste and courtesy of our host, when we inform him that a life-size crayon portrait of my father had been installed in the bed-room which we were to occupy. All our needs and the least of our desires were anticipated with similar foresight and urbanity.

It rained, the day following our arrival, and the projected bee excursions had to be postponed. We spent the time in discussing bee-culture. Before leaving home, I had prepared a memorandum book, with printed questions and blanks for the replies. This contained a hundred pages, and was neatly bound in leather. It proved very useful, but not so useful as I could have made it, had I known beforehand the possible result of my investigations. For instance, I had wished to enquire into the advisability of making worker comb foundation with larger cells than are now made, because one of the French writers has for some years strenuously maintained that the natural comb of the worker bee is larger than commonly asserted, and that still larger cells could be made; that the bees produced in those larger cells are of larger size. I enquired into this question wherever I went, thinking that there might be something of value in it. The result was entirely negative. All that my enquiries secured was evidence that there is irregularity in the cells of the honey-bee, which we already knew, and that larger cells have little or no influence on the size of the workers. In some instances where cells are too far in excess of the worker size, drone eggs are laid in them. The standard worker cells have been variously estimated at 854, 838 (which is the figure arrived at by Mr. Langstroth) down to 736, to the square decimeter. We will refer again to this question later, for I obtained a number of expressions of opinion. Our host was prompt in saying that this matter had no importance, since even if larger bees could be produced, they would require more room, the number of them would therefore be less and the crop result the same.

We spent the time between showers in the fine park of which we give additional views in this number. They are all the work of our host himself, who is a splendid amateur photographer. We gathered mushrooms by the basketful, edible mushrooms which are very plentiful. We also gathered snails. We had never tasted of snails, and were rather prejudiced. But those shell snails are not any worse looking than oysters. They are eaten roasted in the shell, with a nice dressing and taste very good.

The following two days were spent visiting apiaries by the dozen. Getting up at 5 o'clock in the morning we went to Beaune, 30 miles away, in a spring wagon similar to the English dog-cart. They make those vehicles

GERGY — Coteau de la Saône
EDIT J. MARTIN GERGY

ON THE BANKS OF THE SAONE AT GERGY, FRANCE.

An Experimental Apiary at Gergy, France.

altogether too heavy for the fine roads of Europe. Our light buggies, with wheels made of hickory wood, would create a sensation, for nothing as light is seen anywhere. The traveling carts of the peasants could carry a ton or more without breaking down, and do not wear out as our light rigs do. But what a waste of energy and horse flesh in drawing those heavy vehicles over those magnificent roads!

Burgundy is beautiful. Every road is lined with poplars or elms, well trimmed and kept under control. Rape, clover, the silver-leaf linden abound. The woods are full of flowers. Every forest is divided into a certain number of areas, and each is cut down in turn, retaining the finest trees for further growth. No cattle are allowed to range in the young timber. The result is a very thick growth of trees which permits the harboring of game. For that reason the wild boar is still to be found, just as it was in the time of Walter Scott's heroes. I was astonished to find that our host, who is 68 years old and weighs 240 pounds, was still an active hunter and fisherman. He gave us a sample of what he could do by taking us to the Saône river and there, from a little row-boat such as we have on the Mississippi, throwing a large "cast net" from his shoulder, while standing up at the stern of the boat. He caught a fine fry of gudgeons and a few American sunfishes which have lately been raised in French waters.

During the trip to Beaune, with our host, we saw the silver-leaf linden in full bloom. It is much later than our Illinois lindens, but this spot is at the 47th degree while our central Illinois is at the 40th. Their hillsides are mostly in vineyards, and were it not for the pastures and meadows, there would be but little honey production in the mountain portions.

Up the hills we went, among the vineyards, till we reached the park and castle of Mandclot, the property of an aged retired merchant, Mr. Bouchard. While the old gentleman himself escorted Mrs. Dadant to the flower and vegetable gardens and to the hothouse, we visited the apiary from which the manager was extracting honey. They use the DeLayens hive; what we would call here a "long-idea" hive. It contains but a single story, with from 20 to 30 frames about 12 by 13 inches. They prefer this system on account of its simplicity. They have no supers. The honey is all extracted. It is retailed in tin pails and small earthen jars holding a kilogram or more. The kilogram is 2.2 pounds. We opened a 30-frame hive, every comb of which was full. The bees were mainly hybrids.

A magnificent lunch was served to us in the dining-room of the castle, from the products of the farm; milk, cream, cheese, butter, honey of course, fruits of every sort in spite of the short crop, and the inevitable and palatable champagne wine, with enormous home-baked cakes, served on a table 6 feet in width.

At Savigny, on the other side of the mountain, we found more bees, and as hearty a reception. Mr. Vallot, located at this spot, is a manufacturer of bee-hives on a small scale. His apiary, on a steep hillside, is among the vines. Often the vines are trained on single stakes and rarely arranged in rows, for cultivation. Nearly all the tilling is done with the hoe or mattock. There does not appear to be any desire to save hand labor.

It would take too long to tell of all the apiaries which we visited during those two days. We have already spoken, in our September number, page 295, of our visit to Dracy and Chalon. We were feasted everywhere, rather too much. We had breakfast before starting at 5 o'clock, a lunch at 10, dinner at 1, another lunch at 5, and supper at our return at 8 p.m. Five meals, all but the first and last in different places! We were "going some."

During all this time the weather was cool, so cool that Mrs. Champion loaned some furs to my wife, to ride in the early morning. Furs in July! The air was bracing, the view beautiful. Those winding, smooth, white roads are lined with tall poplars. The little rivulets, flowing towards the larger Saône, among the fields, are regularly shaded with willows. The small fields, parceled out, all over France, like a lot of pocket handkerchiefs spread in the sun, are of various shades, from the deep green of the potato field, through the golden of the ripening wheat to the red of blooming clover, and the white of the buckwheat. And to still farther remove the monotony, here and there is a summer-fallowed land, or a rare neglected spot where the red poppy and the blue centaurea spread their contrasting colors.

But I am lingering too long. We must hasten to other scenes. Our next trip will run us clear into Switzerland, by way of Lyon and Albertville. On the 29th, we took the train again. We passed down the Saône, through Villefranche, the home of the famous Vermorel, who invented the sprayer and nozzle known to horticulturists and vineyardists the world over. He has a large factory there. An hour later we were in Lyon, the silk center, and the metropolis of the Rhone valley.

Another Experimental Apiary at Gergy.

CONTRIBUTED ARTICLES~

Comb Honey by Parcel Post

BY ALLEN LATHAM.

IT IS PERFECTLY feasible to send small shipments of comb honey by parcel post, if the limited experience of the writer is reliable. As with eggs, the article must be perfect and a special method of packing followed. To be sure, I have sent only a dozen or so of packages of comb honey through the mails, but I have yet to hear of one of them being injured *en route*.

Two styles of packages have been tried. At first the sections were packed in tin pails with excelsior. This is easy but rather expensive. Only three sections can be put into a 5-quart pail. I have to charge $1.00 besides the postage on such a package. Then single sections in smaller pails were tried. Postage on such in 1st and 2d zones was 6 cents. These were sent for 40 cents including postage. Seeking a cheaper package I tried pillowing a section with excelsior. This method appears to work excellently, and a section thus packed will fall to the floor from a table without injury. From 1 to 2 inches of excelsior is put all about the section and the whole wrapped securely in strong paper.

Sections to be sent by mail should be chosen with care and prepared in a special way. No section which is not solidly filled with honey should be chosen. Those with rows of sealed cells next the wood are best. The section should first be wrapped in a good quality of paraffin paper, then slipped into a carton. The carton is then wrapped in a good quality of paper, care being used that in case of breakage no loose joints be left for escape of honey.

A bed of excelsior is prepared about 10 inches in diameter, the section laid upon this and then covered with a similar blanket or bed of excelsior. Strings are then tied about the excelsior to hold it in shape while it is wrapped. One should not trust such a package with carelessly tied and insufficient string. String this package with at least two windings each way, one winding a little way in from each corner. Bind all windings together, and then if the paper gets torn the package will not become disintegrated.

This method of wrapping calls for a charge of 10 cents per section, involving labor chiefly. As most of such sections are sent out by the purchaser to a friend, either as a Christmas offering or sweet gift, the cost, 40 cents, postpaid, is not prohibitive.

Not more than four or five sections should be sent together by mail. The increased weight causes more disatrous results if the package receives rough handling. If one wishes to send more than four sections, he will do well to send such by express. One of the best ways to send by express is to pack sections in a box in excelsior and tie a cloth or rope handle to the box. I have also tacked to the bottom of a heavy shipment shock absorbers made of burlap and excelsior. But if one is to ship more than two dozen sections, he will find that a barrel is the ideal package. The barrel receives a different sort of handling from the box. I have always had success shipping honey in barrels, even without excelsior beyond a layer at the bottom of the barrel. I have shipped as high as 180 sections in one barrel by express and over 200 by freight.

All the suggestions in this article have to do with shipping sections without the use of shipping-cases. If one is to ship the regular cases he had best use the well-known and well-tried methods now in vogue. My own trade is largely to the consumer, and for such there is absolutely no need of the regular shipping-case.

Norwichtown, Conn.

"A Season's Work"

BY F. W. HALL.

(*Read at the Iowa Beekeepers' meeting.*)

I WISH to give you a "season's" trip through my bee-yard and get you back in time to take the evening train home. I will have to hasten and stop only at the important points of interest. Taking the bees out of the cellar may seem a very commonplace affair, but in reality it is an important proceeding. I have about 400 colonies in six yards. Each yard has a wintering cellar over which there is a bee-tight building in which the extracting is done, and in which the supers are stored when not in use.

When the time comes to get the bees on the summer stands, with the help of another man I spread four or five thicknesses of newspaper on the quilt and place the cover over the papers, stuff the entrance with fine blue grass or an entrance closer, except a small space, and with two hives on a "stretcher" or "carry-call," it is but a short time until we have them all on the summer stands. As we place them on the stands, if they appear too light or need any other attention, we place a mark or stick of some kind on the cover. After all are out, those having been marked with a stick on the covers are given a comb of honey from the honey-house, or adjusted according to their needs, when we are ready to drive to the next yard.

A few days later, when the weather becomes suitable, all are examined for queens and fixed according to what seems to be best for them; not forgetting to keep close watch for any sign of disease, sticking a small peg painted red into the ground at the *left side of the entrance*, where we find suspicious cases, and *in front of the left side* for those found diseased. If treated, I move the peg to the *center* of the entrance, and if after a week or so they show no sign of disease, move the peg to the *right* of the entrance and add one peg for each examination made thereafter until fall. Then if no disease shows, we remove all pegs.

Previous to the honey flow (clover) I keep going the rounds of the yard looking for their needs, spreading their brood-nests as their condition and the condition of the weather will permit, adding super room as needed from time to time, and equalizing by the exchange of brood-frames until about 18 or 20 days before the expected end of the honey flow. By this time most of the colonies are fairly "boiling over" with bees, and all drone-cells are filled with larvæ. Some of the most forward colonies are building queen-cells, and now it is time to begin the dethroning operation. With a boy to handle the smoker, and a man to help look for the queens, we start in a yard, killing all the queens that are two years old, and all the others except what are needed to fill hives empty from winter loss or to increase if more are wanted. Perhaps a colony may be in such condition that it may run through the season with little chance of swarming. This one is given more room if needed and passed by.

With this system of handling the swarming problem, it is necessary to have some easy method of record to keep an account of what has been done from time to time in the yards. Book records do not appeal to me, and for that reason I use the following:

I secure three wood pegs for each hive. They are about 5 inches in length, and are sharpened at one end. As we kill the queens, if we find one that we do not wish to kill, we stick one, two or three pegs on the *left side* of the hive; this means a laying queen. One peg means a fair queen, two pegs a good queen, and three pegs a choice one. The last are usually used for breeders if needed for that purpose. If the queen is killed, one, two or three are stuck *behind* the hive to designate the standing of the queen killed. Ten days later, at the time of cutting the cells, leaving a grafted cell or one of its own hive, one peg is stuck in the ground at the *right* of the hive, this means a cell. A week or ten days later they are examined for queen or eggs. If only a queen is found, two pegs are stuck at the *right* of the hive; if eggs are found, three pegs appear. These pegs remain in this position all summer, and the record is marked on the hive before they are removed to winter quarters. This record is made with pencil on side of the hives. By these records a glance at the hives in the yards enables me to tell the exact condition of each hive at any time.

A yard of 75 or 80 colonies can be gone over by two men and a boy in a day; that is, they will have ample time to either kill queens or cut cells.

I have been repeatedly asked how I find the queens so fast. This is acquired in almost the same manner as one learns to play the piano or to operate the typewriter. I can do neither of the latter, but I think I do know how to find queens. It requires some natural ability, coupled with actual practice along that line of work. It would take too much time to go through all of the details of locating a queen under the various conditions in which they will be found.

The next thing is to go over the yards again in nine or ten days and cut all the cells but one in each colony; saving all of the choice cells from the best breeding queens and destroying all from the poorer stock. A number of nuclei are started from the surplus cells to supply any colony which may fail or have a poor grade queen.

Whenever a comb that carries a good cell can be exchanged we do so; otherwise a cut-off cell is slightly pinched between the combs just above some brood, or pinned on with a small stick or toothpick. Caution should be exercised at the time the queens are killed, to see that there are no cells left that might hatch before the cell-cutting time. In other words, cut all cells as well as kill the queens so that all of the queens will be of the same age. We also see that there is no unsealed brood in the hive at cell-cutting time, as cells might be started and the bees swarm when the grafted cell hatches.

After thoroughly going over a yard in this way a man could not earn his board hiving swarms. I have not handled swarms enough of late to keep in practice. I have been asked how it will work in the production of comb honey to kill the queens in this way. Why not? There are as many bees for the harvest as there would have been had the old queen remained in the hive, since it takes 21 days to rear a worker; besides the brood is not there to require feeding for a part of this time, and by the time the fall flow is on the queen has gotten acquainted with egg laying, and the colony goes into winter quarters with a hive full of young bees. Nothing else hindering, that means good wintering, and good wintering usually means a good crop.

After the super combs get a good start of honey in them, I try to go over my yards and change the empties to the middle, and those with honey in them to the outside of the supers; this makes uniform combs at extracting time. At this round all the brood-nests are examined for queens or eggs and marked accordingly.

A little about extracting and the extracting machinery and I am done. When the honey is ripe and ready to extract, I load my outfit of tanks and 4-frame automatic extractor (Root's make), steam capping knife, and sufficient 5-gallon cans to hold the day's work, about one ton. As the yards are out 6 or 8 miles, it is well toward 10 o'clock before we get there. Team off and turned to pasture, the machinery is taken inside the building, and in less than 5 minutes all is set ready to run. The honey is rushed into the honey-house until nearly noon, when 50 to 60 supers of 9 to 10 frames are in the house. The fire is started under the capping-knife boiler, and while we eat our dinners the capping knife is getting hot. If it is too cold, and the honey is too thick to strain well, a two-wick oil-stove is set under the extractor.

At 5 o'clock we start for home, and while the man gets the team I rush the empty supers back on the hives. The 5-gallon cans have been carried out and loaded as fast as filled. The position of the machinery in all the houses is the same. First, to the right of the door, in the corner of the room, is the extractor mounted on a low bench. A two by four, about 12 feet long, is shoved under a block and nailed to the end wall of the house and sprung down over the back of the extractor and locked under a block and nailed to the side wall. This holds the extractor solid, and is all the fastening needed. Five seconds will have it ready for use.

Next, to the left, is the comb box, next the capping tub, the stove and steam boiler, and across the back end of the room are the honey and other tanks. An electric bell, which is worth its weight in gold, is used to tell us when the 5-gallon can is full of honey. This arrangement is simple, and is made ready for use in 10 seconds. It takes up scarcely any room in the house or in the wagon. The trip arrangement is a short board with a piece of No. 9 wire fastened across it, a short distance from one end; this is used to act as a fulcrum, and a brick is laid at the other end at a point that will balance a can of honey when it is almost full. When the can is almost full it tilts down and makes the electric connection, rings the bell for us to either change the cans or shut off the flow of honey.

When the capping tub is full of cappings, I beat them up fine and empty them into a strainer cloth that is spread over another coarsely woven burlap cloth tied over the top of a can, and allowed to bag down enough to hold the tub of broken cappings. When the capping tub is full again, the four corners of the strainer cloth are caught and the "wad" is dumped into another can with a screen bottom. At the end of each day's work this is hauled home, and the next morning, after drawing off the accumulated honey at the bottom, it is dumped into another tank in the storage house at home and allowed to drain until it is time to melt the wax. My home storage house is a building 24x68, two stories high, and in it I have a great many contrivances that I would like to show you, but time will not permit.

Colo, Iowa.

Propolisine

BY A. F. BONNEY.

I FOUND the attached article in a paper:

USE OF BEE-GLUE IN SURGERY.

"Propolis, or bee-glue, is a waxy or resinous substance collected by bees from the buds of certain trees, and applied by them to the stopping of holes and crevices in their hives, strengthening their cells, and to other purposes in bee architecture where it may be needed.

"On distillation this material yields an unctuous brownish liquid, to which the name of propolisine has been given.

"Propolisine has proven to be an admirable varnish for wounds, covering the well-cleansed surface with an effective soothing and protective coating, and in France its great usefulness for general surgery and for battlefields has been shown by the experiments of Parvel and Mayer.

"Used either alone or with a little vaseline, propolisine has given perfect isolation from bacterial infection, with the best conditions for speedy and uninterrupted healing."

I cannot vouch for the truth of this statement, but can say that I have seen no mention of anything of the kind in medical magazines within a year. As a covering for wounds it might, as is claimed, give "isolation from bacterial infection," but unfortunately for the writer, American doctors do not "varnish" wounds, depending upon medicated gauze instead. To my mind this belongs to the same class of literature as do the tales of wonderful cures of rheumatism by bee-stings, and carrying a horse chestnut in the left pants pocket.

Buck Grove, Iowa.

[We don't believe the carrying of a horse chestnut in one's pocket should be mentioned in the same breath and on a parity with the cure of rheumatism by bee-stings. No remedy on earth can cure everybody, for there are different degrees in diseases. If a disease could *always* be cured by treatment, everybody should be enabled to die of old age. Yet very few people will condemn doctors and their prescriptions as does Elbert Hubbard. Propolis is given credit for quite a few new uses, and we propose to translate an article on the subject which has lately appeared in a European bee-journal. Meanwhile we are willing to have such good-natured critics as Dr. Bonney call our attention to new suggestions even if they do so only to oppose them.—EDITOR.]

Honey and Its Falsifications

BY ALIN CAILLAS,
Agricultural Engineer, Paris.

THE bee's pure and naturally produced honey presents itself to us under different aspects. In normal conditions it granulates; that is to say, in a lapse of more or less time after its extraction, it hardens into a compact and crystalline mass. Instead of remaining liquid, it becomes more or less hard, according to its composition and the plants upon which it has been gathered.

The granulation of honey is a true crystallization. Honey is what we call in chemistry a "super-saturated solution," containing an excess of dissolved material, so that the liquid cannot remain indefinitely limpid at a stated temperature. However, the dissolved principles or constituents may remain in solution for a length of time more or less protracted, on account of atmospheric conditions or temperature, or the presence of substances which impede crystallization, such as dextrine. We then have to deal with liquid honey. On the other hand, when the temperature sinks, when the atmosphere is dry, or when we add to the liquid honey a few crystals of granulated honey, the granulation is produced slowly, in certain parts first, and gradually invades the entire mass.

In natural condition, therefore, and without interference, honey may remain liquid or become solid.

But not all people have the same taste, and some prefer it in the one form, others in the other. We may, in a certain measure, liquefy honey or cause it to solidify.

Nothing is easier than the liquefying of granulated honey. It is only necessary to submit it to a gentle heat, to melt the crystals of glucose and levulose, without however removing the aroma and the "bouquet" of the honey treated. This operation should be called "pasteurisation," from the name of Pasteur, the great savant who pointed to it first as a means of destroying microbe germs and securing a perfect and unlimited preservation of the products thus treated.

MR. ALIN CAILLAS, OF PARIS, FRANCE.

This is constantly done for milk, beer, and all sorts of fermentable liquids. But for honey, the temperature cannot be raised beyond a certain point without danger. Not only this would give it a cooked flavor, but it would entirely evaporate and suppress the aroma which gives its sole value to the original product. As a rule, a "bain-marie" (water bath) over which the honey is placed, should not go beyond 70 to 80 degrees C. (155 to 175 degrees F.). Besides, the operation should not last longer than 20 to 30 minutes, and the bulk should be kept stirred.

We can thus obtain a product more or less transparent which should be at once placed in closed vessels to keep it from contact with the air.

Some honeys, however, granulate again quickly after having been properly pasteurized. That is an annoyance, for the purchaser wonders why he finds in the same jar a solid part and a liquid part, and he may suspect fraud. Some dealers remedy this possible accident by mixing with the honey one percent of glycerine, which delays and often prevents further granulation. Dextrine has exactly the same influence, and that is why some honey-dews or plant-louse excretions, harvested on pine trees, oaks, lindens, etc., rarely granulate, for they contain as much as 10 percent of dextrine.

It is more difficult to make the reverse operation, or induce liquid honey to granulate. We have no prompt method to do this. In no manner can we change liquid honey to granulated honey in a few hours. But a low temperature, a dry place, and a mixture of honey already granulated favor speedy granulation.

Granulated honey is usually sold in jars or in blocks cut into cubes and wrapped with paraffined paper. It keeps splendidly in this way. I will also cite a new package which consists in conical, paraffined tubes, made of pasteboard and very light. They are used for preserves as well as for honey, and profitably replace the glass containers. [Similar tubes are described on page 10 of the January number.—EDITOR.]

When honey has been in the granulated condition for a long time, it often separates in two distinct layers, the lower solid, the upper liquid and transparent. The latter is composed almost entirely of levulose, which is very hygrometric and readily absorbs the moisture of the atmosphere.

Let us say, before studying summarily the adulteration of honey, that its condition cannot give us a positive indication as to fraud. Liquid or solid honey may be falsified. It is on more precise characteristics that we must rely in our researches.

In spite of stringent laws, there are, in all countries, manufactured products which compete seriously with pure bees' honey, mixtures of sweet compounds with honey as well as manufactured articles which contain no honey at all.

IN THE LABORATORY OF ALLIN CAILLAS AT PARIS.
Mr. Etienne Giraud at the right, Mr. Caillas in the center, the Editor on the left.

There are in France, and especially in Germany, large factories which produce artificial honey through a well-known chemical reaction. When a solution of cane sugar or beet sugar ($C_{12}H_{22}O_{11}$) is heated with diluted acid (tartaric acid), a reduction is obtained called *inversion*, and the result is *inverted sugar*, composed of two sugars differing from cane sugar: *glucose* and *levulose* ($C_6H_{12}O_6$).

This artificial honey is therefore made entirely of inverted sugar, and its manufacture has been so perfected that it is difficult, even for a well-informed chemist, to find the difference from pure honey, except through special chemical reactions.

Another preparation is made of a mixture of pure honey with sweet substances, such as the glucose syrup of commerce (crystal syrup, corn syrup) or inverted sugar above described. This may contain 10 to 50 percent of pure honey.

These products are currently sold in commerce, and the sales are authorized by law if the goods are properly labeled. Unfortunately, in the hope of a considerable profit, some makers do not hesitate to label those mixtures "pure honey," and it is easy to appreciate the great damage done to honest honey producers. I have often had the task of making chemical experiments, as official chemist of the "Société Centrale D'Apiculture," and of the "Syndicat de Défense de l'Apiculture Francaise." These tests are very delicate and require great attention, but with a little practice one succeeds in uncovering the fraud.

Another class of adulteration which is rarely found is produced either voluntarily or involuntarily by the apiarist by feeding sugar syrup to the bees. The analysis of this product is extremely difficult. Luckily this sort of adulteration is not sufficiently profitable to be much practiced.

When Mr. C. P. Dadant called at my laboratory for the second time on Oct. 8 last, I had the pleasure of making before him several reactions of honey, to establish the difference between this and adulterated goods. Although there is perhaps less fraud in the United States than in Europe, we have thought that it would be interesting for the readers of the American Bee Journal to make simple acquaintance with the chemistry of honey. We say in French: "*Un homme averti en vaut deux*"; or in English, in shorter words, "Forwarned, forearmed."

I will show, in my next contribution, the methods now in use to make the most simple trials of honey adulteration.

Meanwhile permit me to state that I should be very glad and thankful to receive, from American beekeepers, by parcel post, samples of honey of their crops. I would gladly send them in return copies of the tracts which I have published. My address is: 33, Rue Du Docteur Blanche, Paris, France.

The Ontario Honey Crop and Prices

BY R. F. HOLTERMANN.

I HAVE READ the timely remarks of J. L. Byer, under the heading of "Canadian Beedom," and an item under the New York State Beekeepers' convention report by F. Greiner, in which Mr. S. D. House is reported as stating "that in Canada they had successfully settled the question as to " setting and maintaining the price of honey."

I am in entire accord with Mr. Byer's statement that "a curtailment of production should be the slogan rather than efforts to produce more honey." I have seen for quite a time what matters were heading up to—a crash. Beekeepers' associations have allowed themselves to be tools for the production of more beekeepers, individuals have allowed their best reports to be used to illustrate what profits could be made from beekeeping and—I speak advisedly—individuals have given out *untrue* reports of their profits from bees, the education and training a beekeeper needs have been minimized, and the gross returns and net profits were very closely related. I have undertaken in the Canadian press, to hoist danger signals, but they have gone unheeded. It is by no means the first time that I have pointed out mistakes in connection with the industry, and I have been ignored for a time, then the path I had pointed out had to be followed, and the same is true again. They laugh best who laugh last, is an axiom well worth remembering. I said that I could stand present developments just as long as the rest, and I did.

At present there is a large quantity of honey in Canada unsold. The West has carloads and carloads of honey which has been shipped to it, unsold. The Ontario Beekeepers' Association which undertook to sell beekeepers' honey, sold a few carloads. By what line of justice and equity some of the beekeepers' honey was disposed of, and others had theirs left on their hands I know not, but the great majority either have their honey still on their hands or had to dispose of it themselves as best they could.

A man called at my house recently who sold half of his honey, some 11,000 pounds, at a cent less per pound than the price set by the association, and was lectured for so doing, and told he had just thrown away a cent a pound on that portion of his crop. He could then not even sell it at the cent less which he had refused on the advice given him. I could give more such illustrations. The fact is that with a very light honey crop reported by the association for eastern Ontario and Quebec, there has been an over production. Hard times have reduced the purchasing power of the people, and honey sales have decreased.

The Ontario association seeing that it cannot handle the honey crop has dumped that responsibility on county associations; in other words, it has brought to birth a child (a large honey crop) and laid it at the door of another house to be taken care of and brought up, county associations selling it.

As to Mr. House's statement that in Canada we have solved the problem of setting and maintaining the price of honey, let me tell him *no*, we have not. The comb honey markets have gone all to pieces. Instead of getting $3.00 a case for comb honey as recommended, it has gone down as low as $1.75 per dozen for No. 1 comb honey, and is not bought at that price, and in the West I have some 1500 dozen fancy and No. 1 mixed comb honey which I am trying to sell at $2.40 a dozen to the retailer, and have been for 6 weeks, and that price is not making much impression on the dealer and consumer.

The Honey Committee has no doubt helped to make prices stable, but, after all, what made the prices has been the demand for the goods and the limited supply; in other words, what makes prices is "supply and demand." The demand has fallen off, and the price fixed by the committee has not been maintained.

Some may quote prices from various papers. Let me say such things do not fool me—I have been at the game too long to be blinded. The dealers are filled up with stock; they are not prepared to sacrifice, and they give these prices. But let the beekeeper try and sell at anything like such prices and he will soon find out the value of such quotations.

In fixing the price of honey much more has to be considered than the honey crop; perhaps some important items have not received the consideration they merit. There is one thing quite sure, and that is that with the way the honey market has gone of late; it leaves matters in a very bad shape for the opening of the market after the honey crop is harvested for 1914—if we get any crop.

Brantford, Ont.

Encouraging Beginners

BY THE OPTIMIST.

SHALL WE ENCOURAGE beginners? Certainly, why not? Mr. Byer, in the American Bee Journal for January, says we should not, because in any line there is such a thing as overproduction, and in Ontario at least honey production has reached this point. I wonder if Mr. Byer is not just at present making plans to increase his number of colonies in 1914 so that he can himself increase the amount of honey produced?

To my mind there might be two or three reasons why we should not encourage beginners besides the one which Mr. Byer has advanced. First, if the country is already overstocked with bees, then of course it would be useless to encourage more beekeepers and simply increase the number of colonies and correspondingly decrease the production per colony.

Secondly, beginners should not be encouraged if the business of beekeeping does not pay. In other words if the beginner cannot have the assurance that his bees if properly managed will give returns which will justify time and money expended, then he should under no condition be encouraged to embark in the business.

A third reason which might be advanced would be that the danger from spread of bee diseases would be greatened by the addition of beginners to the beekeeping ranks.

The first of these three reasons I think we can dismiss at once, as I do not think that any one will claim that the country is overstocked except in some isolated spots.

I doubt very much if we can lay much stress on the unprofitableness of beekeeping when the industry is carried on with any degree of desire to succeed on the part of the beekeeper. At least it should pay a fair interest on investment besides paying for labor and other expenses.

I do not think that there is as much danger from the spread of diseases at the hands of the beginner as there is at the hands of the older, but shiftless, beekeeper: the one who never reads a bee book or bee paper but who "knows all about robbin' gums." The beginner is apt to read thoroughly all he can get on the industry and be ready for the emergency, should it present itself.

Let us now turn to the argument advanced by Mr. Byer that "there is an overproduction of honey." In the first place I do not think that the so-called **production** of honey is analogous with the production of other food stuffs from the fact that we do not actually **produce honey.**. We simply keep bees that they may gather it. The nectar is produced by nature. It is there whether it is gathered or not. Why, then, not encourage the gathering of this article which otherwise goes to waste? Why not increase the amount of honey available even if such increase means a reduction in price? The reduction should be better for the people should it not? In the second place, I do not think that the prices of honey in Ontario warrant the statement that there is an overproduction. There is at present a stiff duty on honey importation into Canada. In fact the price difference, between the United States markets and those of Ontario, ranks well above two cents a pound on extracted honey. At least some beekeepers in the States are making headway at the lower price. The solution for Mr. Byer is to reduce the price at which he is holding his honey, or else increase the efficiency of the **marketing** end of beekeeping. To my mind this latter channel, proper marketing, will entirely relieve any tendencies of over supply.

I see no reason, therefore, for not encouraging beginners unless we look at the matter from a selfish standpoint. If we look at it in this way, then no one should be encouraged to go into any industry. It is possibly this reason which has led to the legislation in Imperial County, California, where tons of honey go to waste, yet there is a strict quarantine against bees coming in, be they healthy or diseased, as explained by Mr. J. E. Ross in his article in "Western Honey Bee" for December.

There are reasons why we should encourage beginners. There is the humanitarian reason. The more honey there is on the market, the cheaper it will be, and the better it will be for the bulk of the people. I think very few will gainsay that honey is better for the human family than sugar and that it would be a blessing if it replaced the latter in a larger number of instances.

In numbers there is strength. The more people you have interested in beekeeping, the more apt they will be to secure desired legislation. I wonder if legislation is not apt to be a little easier obtainable since Mr. Pettit increased the ranks of Ontario members from a few hundred to considerably over a thousand?

We would not have the beginner take up territory used for vegetable growing or cotton raising. We would simply encourage him to make use of some of the sweets deposited by nature, to share with his family the treat of a honey spread instead of the commonly used Karo. He would in fact aid the vegetable growers instead of taking from their territory since the added number of bees would mean added chances for proper fertilization of blossoms.

To my mind there are only two **strong** reasons for not encouraging beginners in beekeeping: selfishness and overstocking. We can skip the first one. The latter I do not think we are in danger of, at least for a generation or two. Dr. Kramer of the German "Verein" has 9543 beekeepers as his followers in Switzerland, and they all seem to succeed too. In this proportion, how many beekeepers could Ontario have without becoming overstocked?

Then who wants to have the enjoyment incident to beekeeping all to himself? Just think on those warm spring days how nice it is to get out and "putter" with those bees, look for the queen, watch the first drones appear; and how fine are those big full combs of brood just before clover time! What anticipation there is in the coming harvest! Not encourage the beginner? If you look at it from the pleasure side, you ought to get a donkey-engine and **pull** him in.

Doubling the Yield of Surplus Honey

BY G. C. GREINER.

FOR YEARS it has been my aim to emulate the average surplus honey yields of such men as Geo. B. Howe, G. M. Doolittle and other prominent beekeepers, but in exceptional cases only could I reach their figures. When Dr. Miller told of his crops sometime ago, counting up so many colonies with five supers, so many with four, so many with three, etc., when we lesser-light beekeepers of second and third magnitude had to be satified with one, two, occasionally three and once in a great while with four supers, I held locality responsible for this difference and to judge from appearances, my opinion in this respect is correctly formed.

The fact that the above named gentlemen laid great stress on breeding up a "superior strain" of bees as a means of increasing the yield of surplus honey, I could never consider of as much consequence as they claim. Their efforts in this direction may have a tendency to produce vigorous healthy queens by using improved, up-to-date methods, but to breed a strain of uniform heavy honey-gatherers, is as impossible as to produce a race of Jenny Linds, of Mozarts or of Schillers and Goethes. These are freaks of nature, beyond the reach of human skill and ingenuity to produce. It is the same with these extra heavy yielders in the bee-line. What has become of the progeny of those heavy-yielding, high-priced breeders, of the long-tongued clover queens, etc., of which we have read occasionally? They loom up on the horizon now and then, illuminate the sky for a short period and then like Halley's comet, sink into oblivion.

In my opinion, formed years ago, the value of a queen in regard to honey gathering proclivities is governed more by management and surrounding conditions, than by breeding up a so-called "superior strain." My experience of recent years strengthens my position on this point. For instance: On May 4th, when all the winter packing had been removed and the hives arranged for summer handling, I gave my bees their first thorough spring examination. Among the weaker ones I found one so reduced in bees, that I considered them "beyond help." In two comb spaces they covered a little patch about the size of a person's hand, but the queen seemed to be in fine condition; large, well developed, fine color, only one year old, and, all in all, a desirable addition to any apiary. I felt anxious to save her, and as an experiment, I decided to once more revive an old method by exchanging this weak colony with a strong one; a manipulation I practiced more or less in former years, but not always with satisfactory results.

For this trial I selected a fairly populous colony, but by no means an extra good one, for I would not risk one of my best swarms from which I expected heavy yields, on uncertainties. After the queen had been caged 48 hours she was readily accepted when liberated and the way queen and bees took the situation was remarkable. Brood was started at once; from day to day a decided progress could be noticed and about six weeks later, when the white clover flow began, it was one of my best colonies. It produced during the season 151 pounds of white and 63 pounds of dark, extracted honey, besides 10 or 15 pounds in the combs, when the super was taken off at the end of the season.

If this queen had been left to depend on her own resources it would have taken her all summer, even under the most favorable conditions, to build up her little colony to wintering condition, providing she had survived, which was extremely doubtful. But with the reenforcement of the flying bees from the stronger colony and a fairly good honey season she proved the position I have taken above.

One more point on this subject. My heavy yields of the last two seasons were taken partly from the customary stock of "untested queens," sent out by the American Bee Journal, and partly from the same grade, purchased of J. M. Davis, Springhill, Tenn. To judge from their satisfactory service they were properly reared queens, but as far as I know, nothing was said of "superior strain." At least, no exorbitant prices were charged for them; they can be purchased at fair, living rates.

,The use of full sheets of foundation and bottom starters in our sections, as advised by Dr. Miller in some of his former writings, is a long step towards increasing the yield. Years ago, before I owned an extractor and produced comb honey exclusively, I used foundation very sparingly. I considered full sheets a great detriment to the honey industry on account of the objectionable "backbone" feature. My impression was: the more foundation used, the poorer the grade of honey. This was undoubtedly true at that time. But since foundation has reached the high state of perfection of the present day, the objection of years ago has vanished. In fact, by the use of full sheets of "extra thin" in my sections, I have produced the past season as fine a quality of comb honey as ever was made on naturally built comb. It would have baffled the skill of an expert to detect the difference.

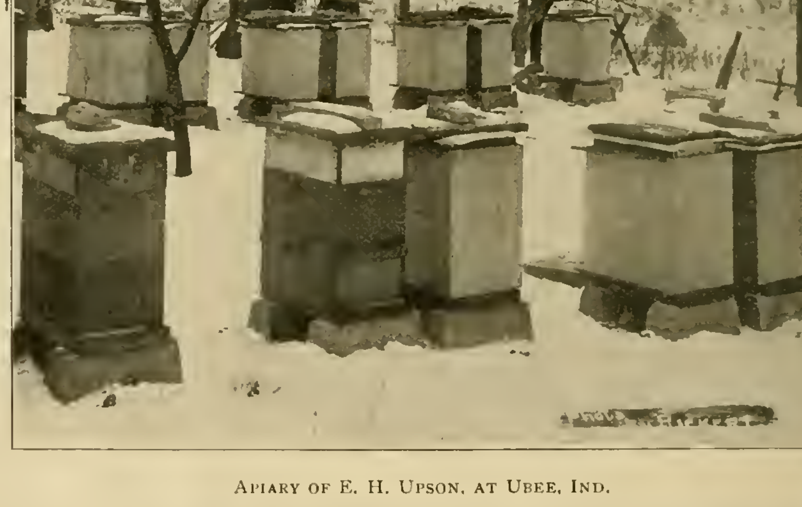
As I indicated at the outset of this article, I have never been wholly satisfied with the average yield of my bees. To accomplish what the above heading implies has been a vain attempt on my part, until within the last two years I have perfected a method, that not only doubles the yield but in many instances more than trebles it. Although I am not through experimenting along this line—there are still a number of points to settle the coming season—the results I obtained are so unprecedented that I feel justified in considering this new method a great advance on the honey production as commonly practiced. There is nothing, complicated or mysterious about the whole system, it is simple, common sense management, that any person with very little experience can follow up and succeed. Outside of the increased yield, many advantages are brought about by this method of which I will speak later on.

The starting point of my discovery if I am entitled to call it such, dates back to five years ago. It was an incident of an accidental nature, that aroused my desire for further investigation.

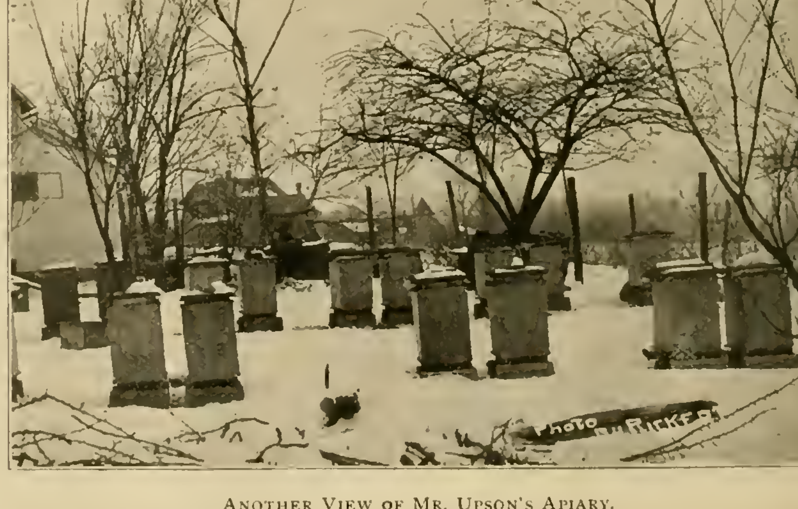
When the white clover flow of that season was nicely under way, some of my very strongest colonies had filled their combs and were beginning to cap in different places. It is my rule to give more storage room at this stage, by way of equalizing. I take from the center of each super two of the heaviest combs and exchange them with two empty ones from some of the weaker ones that have not yet started storing. To make this operation effective in two ways, hitting two birds with one stone, I take all the adhering bees with the combs. This reduces these over-populous colonies and helps to prevent the swarming fever, while at the same time it assists in building up the others, and in many instances induces them to start work in their supers.

The next day a neighboring beekeeper called on me for a bee talk, and when the conversation turned to extracted honey I invited him out among the bees to explain to him my recent manipulations by actual observation. When I took out one of the combs I had exchanged for a full one the day before. I found it seemingly as heavy as the one I had taken out, and for my own satisfaction I took out the other and found it in practically the same condition. That bees fill a set of empty combs in a remarkably short time during a good honey flow can be noticed almost any day when producing extracted honey, but this fact was never brought to my notice in such a striking way as at this time.

When this friend had taken his departure I examined all the hives I had treated, as explained above, the day before, and as far as I could ascertain, all were in the same condition. To investigate a little farther I changed these same combs a second time with exactly the same results on the third day. I changed them again the third day and the fourth day and still these combs were being filled without perceptible let up. By this time I had no more empty combs to exchange. All the weaker colonies were beginning to work in their supers and needed what empty combs they had for their own use. To subply those needy colonies with more



Apiary of E. H. Upson, at Ubee, Ind.



Another View of Mr. Upson's Apiary.

storage room I had to resort to second supers. I did not place them under nor above the first one, but exchanged one-half of the full combs of the first with one-half of the empty combs of the second and then placed the latter on top. All the empty combs, below and above, were quite heavy again long before the combs on which bees were capping were ready for the extractor.

Taking a review of the little experience just related, the following facts revealed themselves: During the four days of experimenting each colony stored in the two, four times renewed combs, between 30 and 40 lbs. of honey, while during the same time the gain of the remaining combs that were being capped, about three-quarters of the super's storing surface, was only a few pounds. This demonstrated that the gain in supers when bees are storing is greatly in excess of the gain when ripening and capping and it seemed very evident that by the application of this principle in a general way great advantages could be obtained. If, for instance, all the combs in each super had been changed, the same as the two in the center, and bees had stored in all at the same rate, the amount gathered in those four days would have been nearly four times as much or approximately 150 pounds. Assuming that the honey flow had lasted three weeks the honey gathered during this time would have reached the moderate little amount of 750 pounds. Quite an item for one colony.

Bright as this prospect seemed at first, a little doubt crept in through the question: What shall we do with all that green, unripe honey? This question will be answered by the success of my method, which I will give as a continuation of this article.

La Salle, N. Y.

Notes from Northern Indiana

BY E. H. UPSON.

THE PROBLEM of wintering is one which taxes the ingenuity of the beekeeper in this latitude (between 40 and 41 degrees). Hardly cold enough to require cellaring and hardly warm enough for outdoor wintering without some sort of protection. For a number of years I have practiced placing a super full of dry chaff over the brood-nest, and in ordinary winters this is sufficient: but when we have a winter such as 1911-1912, we need more protection. This winter I am trying jackets of prepared roofing over most of my hives, and have them so constructed that each hive has a dead-air space around it. I have figured that this will be an ideal protection, but will await results and report in the spring.

I am wintering my bees this winter in double-story 8-frame hives, and these jackets extend from the bottom-board up over both hive-bodies and nearly or quite to the top of the chaff super, the whole being covered with a sheet of galvanized metal to keep everything dry.

Our agricultural journals should maintain a bee-department under the management of a practical beekeeper. About a year ago I called the attention of the editor of one of our leading farm papers to this subject, and he claimed he could not afford to pay the prices for contributions equal to the prices paid by the regular bee-journals. This same editor publishes articles by beekeepers, but some of them are so misleading as to be an injury rather than a benefit to his readers.

The season of 1913 proved to be a good one for beekeepers in northern Indiana, and bees are in splendid shape for winter, while clover is plentiful and there is a prospect of another good season in 1914.

Ubee, Ind.

Odor and Scent in Bees

BY DR. BRUNNICH.

ON THIS EAGERLY discussed theme I will write once more, and for the last time. The absolutely safe introduction of queens was for me always, *and is until now an unsolved problem*, although I have made a great many experiments. I confess freely that years ago I lost numerous queens with the direct method, so that I returned to a modified cage method: The queen is caged two or three days or longer in the hive, then all frames with bees are powdered with meal, a great many of the bees are shaken, and in the midst of them the powdered queen is allowed to enter the hive. This method is based not only on the smell theory, but also on the intimidation of the bees. A perplexed bee will not use its sting. But also with the new method of Arthur C. Miller I had losses.

Besides a great number of experiments in this direction I employed, generally with success, is the following based on the scent theory: I crushed the heads and breasts of two bees with a little water. With this liquid I daubed the new queen and let her enter or put her on a frame. It is not to be forgotten that not in a single circumstance does the scent decide the good or bad result, but that there are always a number of facts which influence it.

I, for my part, uphold the theory that it is the scent which enables the bees to distinguish each other, for the following reasons: Almost all of the insects have an exceedingly sharp sense of smell. We know that the males of butterflies will scent a female which is confined in a room with closed windows, and it is of course not only the *sexual odor* which guides the male, but also the *odor of the species*. Like the Editor, I think that each colony has its individual scent; certainly the bee has a very acute sense of smell. We must admit that it is this very scent which makes the bees recognize each other or foreign ones.

With the scent theory we can explain *all* the respective phenomena, if we do not forget that there are still a number of other influencing facts: season, time of the day, honey-flow, robbing, etc. Why then not accept a hypothesis, which is most probable, and accords well with the facts? We will never be able, of course, to *prove* mathematically this hypothesis; but Mr. Arthur C. Miller gives *no* explanation at all, therefore I see no reason to drop the hypothesis until a better one is given. I can but support all that the Editor and Dr. Miller say in the February number.

An experiment which I have made often, and which each beekeeper can control is the following: To a little colony I united the bees of a queenless nucleus, which goes very well if we spray both with water with about one-half percent of thymal, to cover the *scent*. The following day I put some bees, which had still remained on the last place, on the alighting-board of the colony, and it was interesting to observe the behavior of the guards. In the first moment the guards rushed quite hostilely against the intruder, but after smelling it, retired and let it enter. I cannot but assume that in the first moment the guard considered the bee as a stranger, but found that it was one of the same bees with which the colony had made friends.

FEEDING BEES RYE CHOP AS A GOOD SUBSTITUTE FOR POLLEN IN THE SPRING.
—Photographed by D. M. Bryant.

As to the last point, "requeening without dequeening," I can but say that *my* bees, as a rule, ball and kill the foreign queen, and the case of their *own* queen being killed is certainly an exceptional one. *But with the bees all things are possible.*

A great many of the reported good results of queen introduction are doubtful, because the queens are often not marked in an infallible manner. After the experiences with the new direct method, which does not differ essentially from the old one, with *my* bees, which are of the black race (which I thought rather to be less diffident than the Italians), I can say: A *laying* queen is accepted by a regular queenless colony under difficult circumstances (*i. e.*, dearth) in about 80 percent of cases; a queen which has not produced eggs the last three to five days or more under the same conditions in about 40 to 60 percent of cases. In demoralized colonies percent is considerably less. It is true that our conditions *here* are certainly, as a rule, by far less favorable than in the United States; therefore, your results are considerably better than ours.

Zug, Switzerland.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

What Section to Use

1. Which section is best for the 8 frame super, the 4¼x4¼x1⅞ or the 4x5x1⅜ section?

2. Which width of these sections mentioned, if well filled, will hold just one pound of honey, the 1¼-inch width or the 1½-inch width? OREGON.

ANSWERS.—1. There is little to choose, but most beekeepers would prefer 4¼x4¼x1⅞ to either.

2 There is no size that will uniformly give just one pound of honey. The amount stored in a section varies with the season, bees, etc.

Goldens or 3-Band Italians—Painting Hives

1. Is it a fact that the 3-banded (the bee from northern Italy) is the best Italian bee for the extracted honey producer, because it utilizes less wax in capping its comb than the lighter (the bee from southern Italy) or golden Italians?

2. If the queen-breeders of Italy have not used the careful methods in selecting their stock that the American breeders have, why are the daughters from imported Italian queens, those one generation from imported stock, the best bees for the extracted-honey producer, as Doolittle claims on page 9, in Jan. 1 issue of Gleanings in Bee Culture?

3. If a 3-banded Italian queen mates with a golden drone, what will be the color, uniformity and temperament of the progeny?

4. If a *golden* Italian queen mates with a *3-banded* drone, what will be the color, uniformity and temperament of the progeny?

5. Same as question No. 3, but substitute *Geaman* (black) drone in place of *golden* drone.

6. Same as question No. 4, but substitute *German* (black) drone in place of *3-banded* drone.

7. Does a cross between a *3-banded* Italian and a pure *golden*, or between a pure *golden* Italian and a *3-banded* make as energetic honey-gathering-hybrid progeny as a cross between a pure *3-banded* Italian as a pure *golden* Italian and a pure German?

8. Is it a fact that a strong colony of bees soon varnish and make impervious to moisture the entire inside of a new wooden hive, and if so upon what grounds do you object to the exterior of the hive being painted? CALIFORNIA.

ANSWERS.—1. I don't know; I didn't know a difference in amount of wax in cappings was claimed.

2. Taking this question, and looking ahead at the next five questions, it seems pretty evident that you're trying to exhaust my stock of "I don't know" answers. In the present question I might make the guess that if Italian breeders, as you say, have not carefully selected, then careful selecting on this side would improve the next generation. Perhaps a better guess is that irrespective of previous care in selecting, when the daughters of an imported queen meet drones of stock kept here, there is more or less in the way of crossing, and a first cross is likely to have unusual vigor. But I don't hold Mr. Doolittle responsible for my guesses.

3, 4, 5, 6, and 7. One reason for saying I don't know to all these questions is that one of the factors in each of the problems is so variable as to prevent a definite answer There are good goldens and poor goldens, and different grades from good to poor. Neither is it certain that I could answer satisfactorily if the varying factor were eliminated. In the matter of color, however, I should not expect uniformity, but part of the progeny following one parent, part following the other parent, with perhaps intermediate shades.

8 No, I have so good authority as Doolittle and Dr. Phillips for saying it is not a fact, the latter saying that blisters are raised on the outer paint through moisture that has passed through the inner propolized surface.

Transferring from Box-Hives to Modern Hives

When is the right time to transfer bees from box-hives to modern hives, and how? KENTUCKY.

ANSWERS —Wait until the bees swarm (in your locality they are likely to swarm in May), then hive the swarm in an up-to-date hive and set it on the old stand, setting the old hive close beside it. A week later move the old hive to the opposite side of the swarm, and then two weeks later still, or three weeks from the time of swarming, when all the worker-brood will be hatched out, break up the old hive and add its bees to the swarm. Then you can melt up the old combs.

Reinforced Foundation

1. Have you tried dipping cloth into wax and passing it through a foundation mill? If so, what kind of cloth, color, and preparation?

2. Will bees accept that kind of foundation?

3. Do you think the color of the cloth will make any difference?

4. Will tin cloth injure the rollers of the mill?

5. If the cloth will work, would it not do without wire or splints? WASHINGTON.

ANSWERS.—1. The nearest I ever came to anything of the kind was before comb foundation was to be had, when I coated paper with wax and gave it to the bees. Of course it was not put through a foundation mill, which, at that time, I had never heard of.

2. Yes, the bees built comb on my waxed paper, but it could be drone-comb as easily as worker, and if it had been put through a mill I suspect the bees would have torn it down, At any rate J. Y. Detwiler afterward sent out samples of the same thing with tinfoil in the center and then run through a mill, and my bees tore it down.

3. I don't think color would make any difference, but material might.

4. Yes, I would expect tin cloth, or wire cloth to injure a foundation-mill. To be sure, foundation has been made with wires running through it at intervals, but that is made on a special mill which makes the septum of the foundation entirely flat.

5. If you should succeed in getting foundation with wire cloth in it, or indeed any similar base, neither wires nor splints would be needed. But from what I know about the matter, I think you will only waste time in any such experiments.

Preventing Swarming—Sour Honey—Honey-Dew

1. Can I prevent swarming if I remove the queen after the colony has built up strong and let it rear another queen?

2 What color is the Caucasian bee if the stock is pure?

3. If a queen is introduced in the spring, will the colony swarm the same season?

4 How does it work to set an empty hive on the old stand, say with five frames with empty combs, the queen to be introduced so the bees can get at her to let her out, and let the old bees go into the new hive; then after the bees accept her remove the queen in the old hive, and about eight days later return the bees to the new hive on the old stand?

5. How do Cyprian bees stand our winters?

6. What makes honey sour in the hive when the flow is at its best and no honey-dew? This season I ran my bees for comb honey; in some of the hives honey soured before it was capped

7. Why is it that in honey-dew seasons some colonies gather more honey-dew than others? Such has been my experience.

8 Do certain races gather less honey-dew than others? I have been told so? ILLINOIS.

ANSWERS —1. You can hardly find a surer way to make them swarm, for when the first young queen emerges a swarm will issue with her. You can prevent this, however, if you kill all cells but one, about a week after removing the queen. There is a little danger, however, that you may not leave one of the best cells—you may even leave a cell containing a dead larva. A safer way is to leave all the cells; then a week after removing the queen put your ear to the hive each evening until you hear the young queens piping. When you hear this go to the hive the next morning and kill *all* queen-cells, leaving the young queen that is already at large.

2. About the same color as the common black bee

3. Generally yes. But if three requirements are fulfilled, you may feel pretty safe against swarming; the queen must be a young queen of the same season; she must not be introduced until swarming time; and there must be about 10 days between the time the old queen stops laying and the new one begins.

4. I don't believe there would be any gain over introducing the queen direct without so much trouble.

5. I think about the same as Italians,

6. I don't know. I know it sometimes occurs, and I suppose it is something in the character of the honey itself.

7. I don't know. Possibly there is a difference in colonies as to their preference for different sources One year I had one or more colonies that gathered honey of light color while the rest gathered buckwheat. It might be that they strongly preferred the lighter honey, or it might be that they just happened on the lighter honey in some particular place.

8. I don't know. It is possible.

Preventing Swarming

When one of your strong colonies having two supers almost full, decides to build cells, how do you proceed to bring about contentment in the hive and restore the storing impulse? MINNESOTA.

ANSWER.—You are supposing things that hardly occur. I wouldn't expect to find on a strong colony in a good flow a couple of supers almost full and nothing else.

There would surely be an empty super under, and very likely another on top. Neither would I expect to *restore* the storing impulse, for I would expect it to go right along while cells were being built However, in general, when cells are first found they are destroyed, and this may occur about once in 10 days so long as no cells are found well advanced; but when found well advanced steps are taken to stop the laying of the queen for about 10 days, at the end of which time either a new queen or the old one is allowed to begin laying. A full discussion of the matter in "Fifty Years Among the Bees" would no doubt interest you.

Swarming Caused by Crowding

I have noticed that the colony that keeps its brood-nest free from honey is not apt to swarm. Is this in line with your observations? MISSOURI

ANSWER.—I don't know; but you may be right. Certainly we know that when the queen is crowded for room it tends toward swarming. The more honey crowds into, or encroaches upon, the brood-nest, the less room the queen has for laying, and, it would seem not unreasonable to argue, the greater inclination to swarming.

Brood Above Excluder

1. Is there any danger of swarming when the brood from a shaken swarm, with plenty of bees to take care of it, is put in a new location and allowed to rear a queen of its own?

2. A shaken swarm is made by shaking the bees on ten full sheets of foundation, and the brood set on top with a queen-excluder between the two hive-bodies. If the brood is left two or three days, will it hold the bees as well as when one frame of brood is left with the bees below?

3. When one frame of brood is put in with a shaken swarm should it be left, or would it be better to take it out in about three days to lessen the danger of swarming?

I would make the manipulations as described above, about the first of June or swarming time. ILLINOIS.

ANSWERS.—1. There would be considerable danger with a large body of brood if no queen-cells were present at the time of operating, for by the time the young queen—or rather young queens—would mature, the colony might easily be strong enough to send out a swarm with the queen first emerging. But if queen-cells were well advanced at the time of operating, the danger would be very remote, for at the time of the emergence of the first queen there would be few or no field-bees, and the young queen would be allowed to destroy her rivals.

2. I think it would hold them just as well.

3. The general experience seems to be that it is better to take it out.

Using Splints

I would like to ask your opinion, after reading your book, entitled "Fifty Years Among the Bees." On page 83 you give the dimensions of your frames, and further on you mention splints, which I think I would like. How would it do to make the bottom-bar the same thickness as the top-bar, and instead of having two grooves, one for foundation and one for wedge, have only one grove in each bar; then by having a board nearly the same size as inside of frame, and thick enough to come to bottom of grooves, the foundation by buckling a trifle could be made to enter grooves. After boiling the splints in wax, buckle them into place the same as foundation. Then use hot wax along the top and bottom bar to fasten it in. This would reduce the size of frame, but with the Hoffman frames I find it hard to get the bees to build down to the bottom-bar as they should, so lose some space there anyway. WASHINGTON.

ANSWER.—Your plan will work all right. But you don't need to have any kerf in the bottom-bar, and then you won't need to have it as thick as the top-bar. Indeed, if you wax in the foundation, top and bottom, you will not need kerfs either place. I have some frames without the split bottom-bar, and it works all right. You may say you want the kerf to hold the splint. I never yet put a splint in a kerf, and see no need of it. Of course the top-bar must be thick, kerf or no kerf.

Too Early to Predict for 1914?

Is it too early to predict what the white clover crop will amount to next season? It seems to me that it looks thicker now than I ever saw it at this season of the year.

We have a 50-acre field near our house that was sown to blue grass two years ago. There is now a good sprinkling of young blue grass, but as a whole the field is almost a perfect sod of white clover. I also notice it is pretty thick in old blue-grass pastures. Do you think this looks good for a harvest next season or is it too early to count? KENTUCKY.

ANSWER.—You never can tell in advance just what clover will do. Sometimes it blooms abundantly and yet yields no honey. But when you see the ground well covered with the plants this time of year you may count the chances at least 3 to 1 that it will live through and give you a crop unless a bad drouth occurs.

Good or Bad Location?

1. In order to combine the heat can I make and build into two strong colonies a twin nucleus with laying queens by placing one brood-chamber on top of another with wire screen between?

2. Where shall I look for royal jelly? How shall I know it when I see it? Is it ever stored in brood-combs?

3. I live in a timbered region where the couutry is about one-fourth cleared; the cleared land is covered with blackberries, asters, goldenrod, and a little white clover; nearly every farm has a small orchard. The forests are composed of a small growth of linden, sourwood, poplar, chestnut, black gum, hard and soft maple, alder, a little willow, and some wild flowers. What kind of a location do you think I have?

4. How many colonies can I handle in one apiary?

5. Should I run for comb or extracted honey?

6. If I run for chunk comb honey what variety or cross of bees should I use? VIRGINIA.

ANSWERS.—1. Yes, but you may like it better to have the two nuclei side by side in the same hive, with a thin division-board in the center.

2. You will never find royal jelly in the hive until the bees start queen-cells; then you can't miss finding it in these cells; a milky looking paste.

3. I should think bees might do well there.

4. Perhaps 75 to 100 colonies.

5. I can't tell you; depends upon your market; like enough extracted.

6. You will be pretty safe to choose Italians for any kind of honey.

Sweet Clover—Artificial Pollen

1. How would it work to give the mother colony a laying queen as soon as it has cast a prime swarm; remove all queen-cells and move them to a new location in the same yard.

2. Recently it was stated in one of the journals that a crop of hay and a crop of honey could be secured from a field of sweet clover in one year. Now that is wrong, a crop of honey and a crop of seed can be gotten in one year. But in order to make good hay it must be cut sooner than if it was allowed to grow to secure a crop of honey out of it.

3. Why is it that in your telling the use of rye flour and pea meal for artificial pollen, you never mention wheat flour. Why is wheat flour never mentioned or recommended?

4. Did you use artifical pollen for your bees in the spring of 1913? NEBRASKA.

ANSWERS. 1. I suppose you mean to set the swarm on the old stand; it would work all right.

2. Yes; but why not cut for hay before blooming? That would make the honey crop later; and this would be of greater value in a white-clover region where sweet clover is likely to bloom during white-clover bloom. Cutting the sweet clover early would allow it to bloom after white clover was done, thus prolonging the season.

3. It is probably a case of blindly following tradition. My guess would be that wheat is as good as rye; but I never tried either. I know that ground corn and oats does well.

4. No.

Swarm on Stand of Parent Colony

1. Will it prevent the mother colony from swarming again if the prime swarm is put on the stand of the old colony removed to another stand without taking the super off?

2. How long must a colony be left queenless before introducing a queen?

3. How is the queen put in with the new colony?

4. Will bees go up into the supers for honey if they ran out of honey below when in the cellar for winter?

5. When returning an after-swarm to an old colony is it necessary to kill the queen? MINNESOTA.

ANSWERS.—1. Sometimes, and sometimes not. But the following plan may be counted on in nearly all cases: Set the prime swarm on the old stand with the old hive close beside it, facing the same way; a week later move the old hive to a new stand 10 feet or more away. The super or supers should be taken from the old hive and given to the swarm as soon as the queen has made a good start at laying, say within about three days.

2. Practice differs; some give the new queen at the same time the old one is removed and some wait three or four days. I have had success by giving the queen at time of removing the old one, but not allowing the bees to liberate her until three or four days later.

3. Generally in an introducing-cage.

4. Maybe, and maybe not. Unless pretty warm and the colony strong, likely not.

5. Not absolutely necessary; but if you pay no attention to the queens you may have to return the swarm several times. But if you destroy all the queen-cells left in the hive, once returning will answer.

Increasing Where the Honey-Flow Comes in August

On April 26, I received three ½-pound packages of Italian bees with queens from Alabama. I put them in new hives with full sheets of foundation. When I packed them for winter one hive had the ten frames full of bees, honey and brood; the other two had nine frames each of brood, bees and honey. I am sure they will winter. They were bringing in pollen today (Dec. 13). By Aug. 1, 1914, I want ten full colonies. Tell me just how to proceed and when to start. One honey-flow starts here in August. We have abundant white clover in the spring, but bees do not seem to store until August. Then the honey is from goldenrod and a yellow daisy growing in the swamps of our county.

I was thinking of getting three more bodies and placing them over each colony about April 25 or May 1 with full sheets of foundation; that should prevent swarming in May. When the two bodies are full of bees then I could divide for increase by taking five frames of bees and brood from the upper body and placing them in a hive with five full sheets of foundation, and buying a queen for them; place the new hive where the old one stood, and remove the old one to a new stand and replace the five frames of brood and bees taken from it with five frames of foundation, and when they fill up do the same thing again.

I put a super on one of my hives Sept. 1, and the bees would not go up through the queen-excluder I had under it. Of course, the season was late, but I don't believe they would carry honey up through that unless it was a very heavy flow. The next time I am going to try the super without the excluder. Do you think the queen would go into the sections? PENNSYLVANIA.

ANSWER.--Don't you think you're asking a good deal? You want not only to increase from 3 to 10 colonies, but to have them *full* colonies by Aug. 1 in a place where there is no flow until August. Of course you can make up somewhat for the lack of a flow by feeding, but feeding never seems to be quite as good as the natural flow. There is a possibility, however, that there is more of a flow than you think earlier in the season. Even if not enough for a surplus, if there is just enough for the daily needs of the bees they may build up just as well as with a heavy flow. Your idea of buying queens will make quite a difference. Your plan will be all right *if* the bees do as you plan; that is, if they fill two stories full of bees, and then do it a second time. If you get 10 full colonies by Aug. 1, you ought to get a good deal more than one super from each colony, seeing that your harvest comes after that time. But if the colonies do not build up until later, leaving you without surplus, you ought not to complain bitterly.

Instead of putting a second story over each colony, it may be better to put it under, for so early as May 1 an upper story might cool off the bees too much. Besides, bees naturally extend their brood downward rather than upward. If I understand aright, the new queen will be on the old stand, where all the older bees will be. She will be received more kindly if you put her in the other hive.

I think it was the lack of the flow and the lateness of the season rather than the excluder that kept the bees from going up into the super. But I never use an excluder under sections, and have very little trouble about the queen going up.

Double-Walled Hives

What do you think of double-walled hives for this locality? Bees cannot be wintered here in cellars as the climate is too changeable. None of the old beekeepers here use double-walled hives. They say there is no need of extra expense, and bees do as well in 10-frame single-walled hives. Neither do they use any sort of winter cases, as they say that if anything of the kind is used it should be left on all the time, as in such a changeable climate no one could tell when to put it on or take it off.

Is the double-wall hive any advantage in *hot* weather if the hives are properly shaded?

Of course the cost of double-walled hives is much more than the single-walled, and also much more trouble to handle, but if the advantage of double-walled hives is greater, I would be willing to pay the extra cost and take the extra trouble.
SOUTHERN ILLINOIS.

ANSWER.—As a a rule, it is wise to attach weight to the experience of others in a given region, although something depends upon their intelligence. At any rate, no farther north than 38 degrees it is not at all likely that double-walled hives are advisable either for summer or winter.

Transferring, Increase, Etc.

1. I bought 8 colonies this last summer; 6 of them I will transfer in the spring into new hives. I will put a new hive with wired frames on top of the old stand, drive the bees into it and put an excluder between them, and leave them for 21 days, and drive the balance of the bees into the new hive, then I want to divide them. Then I figure that in three weeks from the time I make the change I can divide them. I will put them into new hives about fruit-blossom time. Am I right?

2. I bought 50 colonies for an out-yard, and will want several queens. Will you tell me the best or good way to manage an out-yard to prevent swarming as much as possible, and what is the most professional way to make divisions so as not to hurt the honey crop too much and yet have some increase?

3. How many sections 4¼x4¼ will one pound of thin super foundation fill; full sheets?

4. Do you advise full sheets to get better filled sections? Does it pay?

5. Do you advise spring feeding early to induce brood-rearing?

6. Would you advise one-pound packages of bees rather than 1, 2, 3 frame nucleus?
SOUTH DAKOTA.

AVSWERS.—1. As I understand it, you will drum the bees up into the new hive, and leave it three weeks over the old hive, an excluder between, then three weeks later still you will divide. That would make the division six weeks after the drumming, or, to put it the other way, you would drum six weeks before dividing, or six weeks before fruit bloom, since your plan to divide in fruit bloom. Six weeks before fruit bloom the weather will be unfavorable, there will be little or nothing for the bees to gather; they will probably not be very strong yet, and if you drive them from their combs and ask them to draw out foundation you will probably knock things endways for the season. Better wait until the bees have built up strong, even if you have to wait until after fruit is in bloom. Indeed, even if they are strong, it will be well to wait until after a very few days before fruit bloom, say four or five. Then drum your bees up into the new hive, and set the new hive *under* the old one, with excluder between. (Bees extend their brood-nest downward rather than upward.) Ten days after the drumming, take away the old hive, bees, brood, and all, and set it on a new stand. Then 11 days later, or 21 days after the drumming, drive the bees from the old hive into a new one furnished with full sheets of foundation. It may be the bees have reared a queen; if not you must give them one.

2. Perhaps the most popular way is to shake a swarm as soon as colonies first begin to swarm, which may be called anticipatory swarming. If you do not care for much increase, you can double up the brood-combs from two or more colonies

3. About 100.

4. Yes, indeed; I could hardly be hired to use less.

5. I do not practice it; so could hardly advise it. Harm may be done by feeding when too cold. If the bees have abundance of food—not merely enough but abundance—and have all the comb they can cover, what more can you ask? There are places, however, where early in the season, but after it is warm enough for bees to fly freely every day, there is so long a dearth of forage that the queen soon stops laying. In such a case it is important to feed every day, or every other day, enough to keep up laying.

6. The same number of bees will of course be worth more with frames of brood than without; but considering the expense of expressage on combs, it is likely that a given amount of money put in bees without combs will be better than the same money put in nuclei.

Wants Best Advice on Getting a Crop

I put into winter quarters 21 colonies of bees; all in good shape as far as I could see. Those that I had any doubt about having plenty of stores to winter and carry them *late* in the spring, I fed.

Almost all of them are in double-walled hives, 10 frames. Nearly all have young queens. I have an additional protection around them; they are boxed with lumber, and covered so that no snow or rain gets on the hives; a space of 6 or 8 inches between the hives and protection boards; but it is not packed with anything. I have boards in front. I let them down when it is warm enough for them to fly. They had a flight three days last week. I saw some of my bees ½ mile from home. They flew *very strong* from each hive, like in summer time, and I carried out lots of dead bees; they "appeared" to be in good condition.

I can have $40 or $50 to put on them next summer, and I want to make them do the *very best* possible in the way of honey production. My pasture is principally white clover, a good amount of alsike and red clover. Sugar maples are abundant, as are apple and peach ,trees, etc. There are not many bees here, and no disease.

I would like some advice as to management in order to make the most out of them. I have two supers or more per hive. I use generous sized starters of foundation in the sections. I will want 10 or 15 new hives, but not enough swarms to interfere with the honey crop. OHIO.

ANSWER.—I have written out in full detail the very best advice I know how to give to one who desires, as you do, to get the bees to do their level best, and you will find it all in the book that you have, "Fifty Years Among the Bees." By following the plans there laid down, last season I secured an

APIARY OF D. M. BRYANT AT ETHELFELTS, VA., PREPARED FOR WINTER.
The hives are wrapped in newspapers and building paper.

average of 266 sections per colony. Then be sure to keep tab of what each colony yields, so as to breed from the best afterward There may be some question whether you are warranted in departing from the usual plan of having packing in winter; but if you have had previous success in that way, it may be all right to keep on. Anyhow, a good flight in the last of January promises well for good wintering.

You want your bees to do the *very best* in the way of honey production, and say you will want new hives for about 50 percent increase. You can't increase as much as that without interfering with the honey crop, unless you are sure of a heavy late flow. You have two supers or more per hive with generous starters in sections. Oh, you stingy fellow! Asking the bees to store a big lot, and then giving them so little room to store it in. I wouldn't want less than 6 or 7 supers for each colony, all filled ready to put on the hive. In the height of a good flow there will be on each of my hives a super at the bottom empty to half full, an empty one on top, and between these two from four to six supers pretty well filled. With less I should lose honey. Instead of "generous starters," fill each section with foundation except ⅛ to ¼ inch space between top and bottom starters.

Feed for Cellar—Full Crop and 100 Percent Increase

1. How would you prepare sugar syrup to feed in cellar, when it is absolutely necessary to feed in mid-winter to preserve from starvation?
2. How would you make artificial increase of 100 percent in an apiary and at the same time secure full amount of honey crop from clover and basswood?
3. Is there any advantage to have the entrance 1½ inches deep and full width of hive? CANADA.

ANSWERS.—1. Just a plain syrup; 2 pints or pounds of water to 5 pints or pounds of sugar. Stir the sugar slowly into the hot water, and be very careful not to scorch it. But you might do better to make a plain candy and lay over the frames.

2. I don't know anyway to make increase without cutting down on the crop of honey unless it be in a place where there is a very heavy flow, and then any old way will do.

3. Yes; it gives chance for better ventilation in hot weather, and also in winter if you winter in cellar. But you cannot have 1½ inches under bottom-bars in summer unless you have some provision to prevent the bees building down.

Improving Stock

1. I have 19 colonies of common bees of poor stock that I wish to improve this coming season. All that I care for is their honey-gathering qualities. There are people all about me that keep anywhere from 2 to 10 colonies of the same kind of bee in box-hives, and it would be almost impossible to buy them out and get them to stop keeping bees. I am thinking of putting an order with some reliable queen-breeder early in the season for two dozen Italian queens, and dividing my strongest colonies.

If I rear my own queens; that is, send and get a breeder queen and rear queens from her, I would have nothing but hybrids; but may be they would be as good honey producers as tested queens? Now, what is the best thing for me to do? If there is a better way to improve my bees than either of these I would like to have it. Our best honey-producing plants are clover, buckwheat and goldenrod. MARYLAND.

ANSWER.—It is true that in many if not most cases the first cross does as good work as the pure stock, but the next generation is likely to deteriorate. If you get 24 Italian queens, you'll be all right for a time, and then the bees will run down. Instead of getting the 24 all in one year you might do better to get 2 each year for 12 years, and breed from them. Then you would have pure drones each year, whereas if you get the 24 all in one year you might not have a pure drone in four or five years.

Early Work With Bees

1. I have purchased a few boxes of black bees. I want to put them into new hives and requeen them in the spring. How early would you advise working with them?
2. Would you requeen or hive them first?
3. Where can I get a first-class Italian queen free of disease? NORTH CAROLINA.

ANSWERS.—1. You can do a lot of mischief by beginning too early in the season to make any radical change in the condition of the bees. Don't think of transferring them into movable-frame hives until they are busy gathering nectar and in good condition to engage actively in the work of comb-building. That will hardly be before the time of fruit-bloom. It may be still better to wait until they swarm, then hive the swarm in a modern hive, and three weeks later break up the old hive, for at that time all worker-brood will be hatched out. The bees from the old hive may then be united with the swarm, or they may be kept as a separate colony and transferred into another hive.

2. It might be as well to requeen after the swarming or transferring.

3. In the proper season there are always found in this journal advertisements of those who have queens for sale, and these may be relied on as free from disease. A man who would send out a queen from diseased stock would steal.

Miscellaneous Questions

1. I am going to buy five dovetailed 10-frame hives this spring. I only want honey for the house. Which is better for me, the extracting hive or sections. I read in the bee-books the extracting hive is best for home use. Please tell me why.
2. Can I get honey out of the extracting frames without the extractor? Can I melt it over the stove some way without breaking the comb, and will the bees store honey in the comb again?
3. Is sap from rock-maple good feed for bees? If so, should it be boiled down or fed as it comes from the tree? If boiled down, how far should eight quarts be reduced to make the best feed?
4. Which smoker is better, a cold blast or hot blast? NEW HAMPSHIRE.

ANSWERS.—1. Extracting saves the bees much labor in building comb, so it is generally estimated that you can get about half more extracted than comb honey. So in deciding the question for yourself the question is whether you would rather have 100 pounds of comb honey or 150 pounds of extracted.

2. No; if you want to save the combs it's the extractor or nothing.

3. Yes; the bees will take it without boiling down. But look out not to feed it on days too cool for bees to fly freely.

4. Take the cold blast. Even with that I have known the smoke to be so hot with a strong fire as to melt the cappings of sections, and to kill bees.

Transferring—Entrances in Winter

1. When is the best time to change bees from box-hives to movable frames? How is the best way to do it?
2. Do the metal-spaced frames give ample room for bees to pass between frames?
3. When a drone hatches at the same time a queen does, is he old enough to fertilize her?
4. When bees are wintered out-of-doors in boxes, chaff on all sides and top, with the ⅞-inch side of the bottom up, will it be all right to leave the whole entrance open; that is, the whole length? IOWA.

ANSWERS.—1. Wait until they swarm, and then proceed as in answer to Kentucky.

2. Yes, they take up almost no room.

3. I don't know, but I hardly think so.

4. Most beekeepers would probably close up about ⅔ of it.

Transferring

Which is the best way to transfer bees from boxes to hives? Last summer I had so many swarms that I ran out of empty hives and had to hive some in winter covers that I use. OHIO.

ANSWER.—It is getting to be considered the best plan to wait until the bees swarm, hive the swarm in a new hive, and then 21 days later to break up the old hive and add its bees to the swarm.

REPORTS AND EXPERIENCES

Good Crop in Idaho

I had 40 colonies, spring count, and increased to 83. I sold a little over 2000 pounds of honey, but we get only 10 cents per pound; very fine honey at that. I sold all my extracted honey for 8 cents per pound, but I was told by my customers that they never had finer honey than I furnished them.

Ustick, Idaho. JOHN BLISS.

A Big Increase and Some Surplus

Bees worked on dandelion on Dec. 6, 1913, the latest I have ever known. We have had the best fall crop of asters for years in this locality. I lost 65 colonies out of 70 in March from floods; that left me 5. I increased to 50 colonies, and produced 500 pounds of comb and extracted honey. How is that for increase? They are all strong and have plenty of honey to winter on.

LOUIS WERNER.

Edwardsville, Ill., Dec. 16, 1913.

Why Extracted Honey Should Have a Preference

I have read many articles in bee journals, some trying to prove that it is more profitable to raise comb honey, and others claiming that extracted is more profitable. I raise extracted exclusively from my four bee yards, and buy what choice comb I need for my trade, and no matter how good a crop I get I have to buy several thousand pounds every year to supply my customers, and the way I look at the matter is that most of the writers do not touch the main reason for raising extracted honey instead of comb, which is that of taking the price, say 12 cents, for extracted, and 50 percent more, or 18 cents, for comb honey customers. They will buy 10 pounds of extracted to one pound of comb, or at least I can sell 1000 pounds of extracted at 12 cents easier than I can 100 pounds of comb at 18 cents, and that when I have plenty of both kinds for the customers to select from.

Parksville, N. Y. A. W. SMITH.

Orton's Home-made Saw

As winter is a leisure time, the idea struck me it would be a good time to make a saw rig as described on page 377 of Gleanings in Bee Culture for 1012 To be brief, the thing was a flat failure with me. It takes a better kicker than a man in his 80th year. To help out, I got a neighbor, with his 1½-horse-power gasoline engine, which made the saw sing like an angry bee.

The winter has been very mild on the coast, with lots of rain, and no freezing weather. The fields are as green as in June. I have 55 colonies of bees, mostly Italians, wintering well. M. S. Snow.

Littell, Wash.

Good Prospects

We had a fair crop of excellent clover honey last season, and the prospects are bright for a good crop of clover this year. So far bees are in good condition with plenty of winter stores. Addison Gould.

Weston, W. Va., Jan. 17.

Dry Season but Good

This is my third season with bees. I have 20 colonies, spring count, and they gave me 1000 pounds of honey this season, about 280 pounds of section honey, and the balance extracted. It is all of good quality, but the season was dry. J. A. Horn.

Westwood, N. J., Dec. 10, 1913.

Interest the Boys

As the time will soon be here for putting out some decoy hives, boys get busy and see how many swarms you can catch and make some easy money. I will tell how I do it:

Buy a candy pail at the store for 10 cents, split a small piece off the cover and fit a piece on that will extend out to make the alighting-board. This, with a few cross sticks, is all that is necessary if we were going to let them fill the pail, but if it is profit we want we will transfer them to a good standard hive. I have planned a false bottom to be nailed to a flat board with a cleat bracing it from both sides, and a hand-hold at the bottom for lifting it out.

If they have filled the pail with comb before you see them, all that is necessary is to cut around the pail and raise them out and shake them into your hive. Cut out the comb that you wish to save and leave plenty as a bait, and you have a better decoy hive than a new one.

I would advise that the pail be well painted on the outside, which will keep it from having any open cracks. My boys are going to put out quite a number.

Toledo, Iowa, Jan. 30. F. B. Millard.

Rearing Some Brood

I opened two hives yesterday; one had no brood, the other had a circle 6 inches across one way and 8 the other, mostly sealed. The hive was packed on the summer stand; mercury at 56 degrees in the shade. J. L. Strong.

Clarinda, Iowa, Jan 10.

No Loss Yet

No loss so far. Bees have not been confined to the hives to exceed ten days at any one time this winter. They were out yesterday, and will get a good flight today.

Bradshaw, N. Y., Feb. 10. C. B. Palmer.

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THE COMING BEE

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P. S. Will sell Nuclei from my Michigan yards only.

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BEES AND QUEENS.

Queens, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

For Sale—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

Phelps' Golden Italian Queens will please you.

Bees and Queens from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

Golden all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
2Atf Robert Inghram, Sycamore, Pa.

1914 Queens—Moore's strain of leather-colored Italians. In April at 75c. Bees by the pound and Tested queens. Write us for prices on nuclei. Address,
Ogden Bee & Honey Co., Ogden, Utah.

Golden and 3-Banded Italians, also Carniolan Queens. Tested, $1.00; untested, 75c each. Write for prices of bees per pound and nuclei. C. B. Bankston,
tf Box 65, Buffalo, Leon Co., Tex.

Italian Queens—Bees by lb. Descriptive List free. Apiaries under State inspection. Leaflets, "How to Introduce Queens," 15c. "How to Increase," 15c; both, 25c. 2A1t
E. E. Mott, Glenwood, Mich.

Queens—10 percent discount for orders received before May 1, to be filled in May and June. Tested, $1.00; untested, 75c. Dead ones replaced free. 2A9t
S. Click, Rt. 2, Box 16, Mt. Jackson, Va.

Phelps' Golden Italian Bees are hustlers.

California's Golden and 3-banded equal the best. Try them March 1. No. culls. Tested, $1.25 to $2.50. Select mated, one, 75c; 12, $8.00; 50, $32; 100, $60.
W. A. Barstow & Co., San Jose, Calif.

Italian Queens, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or $7.25 per dozen. Safe arrival guaranteed.
W. W. Talley, Queen Breeder,
3Atf Rt. 4, Greenville, Ala.

Strong Colony of Italian bees, with tested queen, in a complete new hive, $10. Tested queen, $1.50. I. J. Stringham,
105 Park Pl., N. Y.
Apiaries, Glen Cove, L. I.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Queens bred from Moore's and Doolittle's best Italian stock. Untested, 60c each; $6.60 per dozen; $50 per 100. Tested, 90c each; $10.20 per dozen; $80 per 100. Delivery guaranteed. Book orders now. Nuclei any quantity; 2-frame, $1.50; 3-frame, $2.00. Add price of above queen wanted.
Spencer Apiaries Co., Nordhoff, Calif.

We requeen our bees every year with best Italian stock to prevent swarming. We offer the one-year old queens removed from these hives at 50c each; $5.40 per doz.; $40 per 100. Delivery guaranteed. Book orders now. Nuclei any quantity; 2-frame, $1.50; 3-frame, $2.00. Add price of above queens wanted.
Spencer Apiaries Co., Nordhoff, Calif.

Dunn's Golden Italian queens, bred strictly for business that produce a strong race of honey gatherers. March 1 to Oct. 15. One, mated, 75c; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60. L. J. Dunn, Queen Breeder,
2A9t Box 337 G, R. R. 6, San Jose, Calif.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

For Sale—Moore strain and Golden Italian queens. Untested, $1.00; 6, $5.00; 12, $9.00. Carniolan, Banat and Caucasian queens; Select Untested, $1.25; 6, $6.00; 12, $10. Tested, any kind, $1.50; 6, $8.00. Choice Breeders, $3.00 to $5.00. Circular free.
W. H. Rails, Orange, California.

Quirin's Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G. Quirin,
The Queen Breeder, Bellevue, Ohio.

For Sale—3-banded Italian queens, nuclei and bees by the pound. Being large honey-producers, we breed hustlers. Untested queens, each, 75c; tested, $1.25. Without queens, 1 pound of bees, $1.25; 2-frame nuclei, $2.50. Write for a complete price list.
2Atf Brown & Berry, Hayneville, Ala.

California Italian Queens — 3-banded and Goldens by return mail after March 15. Select untested, one, 75c; 12, $8.00. Tested, $1.00; breeder, $3.00. Bees by the pound, a specialty, ready April 1. 1 lb., $1.35; 2 lb., $2.50. Delivery and satisfaction guaranteed. Correspondence solicited. Circulars free.
J. E. Wing, 155 Schieler Ave., San Jose, Calif.

Three-Banded and Golden Italian queens. Ready March 1. They have been bred for three points, prolificness, gentleness and honey-gathering qualities. Prices, Select Untested, 75c each; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60. Tested, $1.50; Select Tested, $2.00.
Garden City Apiary Co.,
R. R. 3, Box 86, San Jose, Calif.

I Will Sell and ship an equivalent of 500 2-frame nuclei from 400 colonies in northern Louisiana, in April and May.

Two-comb nuclei	$2.00
Three-comb nuclei	2.75
One pound bees in Root cages	1.50
Two pound bees in Root cages	2.50
Young queens for business—extra	.75

You can buy bees from me for much less money than the value of the honey it takes to winter in the North. And you can use your extracting combs from your foul-broody colonies. Address until Match 14—
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HONEY AND BEESWAX

"Null's Famous Melilotus Honey." Sample for stamp. Null Co., Demopolis, Ala

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
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For Sale — No. 1 white comb, $3.50 per case; No. 2, $3.20; 24 pounds to case.
Wiley A. Latshaw, Carlisle, Ind.

$1000 (one thousand). I will pay the above amount in cash for one pound of honey that is equal to my *Red Ripe* (Harnessed Sunbeams) Honey in digestibility, nutrient, value or flavor. Samples and prices free.
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India—The Eastern Commercial Agency, 3149 Richey Road, Ahmedabad, Contractors, and Agents, export beeswax and India provisions, pickles, drugs and condiments. Import motor, electric and municipal goods and machinery.

Extracted Honey — Best pure Illinois, White Clover and blends with Sweet Clover, Amber Fall and Spanish-needle grades. Also fine Western Water-white and Light Amber Alfalfa. All packed in 5, 10 and 60 lb. cans. Some in barrels. Samples and prices Free. Dadant & Sons, Hamilton, Ill.

FOR SALE—Choice extracted honey, thick, well ripened, delicious flavor. Price, 9c per pound in new 60-lb. cans. Address,
2Atf J. P. Moore, Morgan, Ky.

FOR SALE—4000 lbs. fine quality raspberry-milkweed honey at 8c per lb. Also 1000 lbs. light amber at 7c f. o. b. here. All in new 60-lb. cans (2 in case). Small sample free.
2Atf P. W. Sowinski, Bellaire, Mich.

DEALERS and producers who buy honey kindly ask for a late number of the Review, giving a list of members having honey for sale. Many carloads are listed in each number. Address,
The Beekeepers' Review, Northstar, Mich.

SUPPLIES.

FOR SALE — Root's goods and Dadant's foundation at factory prices.
Spencer Apiaries Co., Nordhoff, Calif.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

BETTER HIVES FOR LESS MONEY—Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

THE WEAVER automatic honey-extractor. It reverses at full speed, is simple and positive, saves 50 percent of labor and at the same time increases the output 50 percent. A 4-frame will do the work of an 8. Everyone in the market for an extractor send for full particulars. Weaver Bros.
Richmond & Falmouth, Ky.

THE NATIONAL Beekeepers' Association now buy supplies for their members. Send us your order, enclosing the same money you have to pay others, and we will buy them for you on the co-operative plan. If not a member we reserve the right to retain $1.50 from the profits on your first order to pay your membership dues and subscription to the Review one year. Sample copy of the Review free. Address,
National Beekeepers' Ass'n., Northstar, Mich

FOR SALE

75 COLONIES of bees for sale. Write
Jay C. Davis, Rt. 2, Marshfield, Wis.

HAVE MORE Bees than I can handle, also extra farm for sale. W. T. Bailey, Suffolk, Va

DOUBLE the honey crop and save half the labor, 25c. Money back if not satisfied.
O. N. Baldwin, Baxter Springs, Kan.

FOR SALE—Barnes' foot power saw in fine condition and used very little. Price, $20.00.
R. E. Hammond, Heath Springs, S. C.

ONE 2½x13 Vandervoort Mill, light or medium brood, $18; one six-inch super, Root Mill, $8.00. Both in perfect order.
F. H. Cyrenius, Hillside Park, Oswego, N. Y.

FOR SALE—20 Horse Power I. H. C. Delivery Truck; good as new. In fine condition and running order. Will be sold at a bargain.
A3t L. Werner, Edwardsville, Ill.

FOR SALE—Empty second-hand cans, two cans to the case; good as new; 25c per case.
C. H. W. Weber,
2146 Central Ave., Cincinnati, Ohio.

MISCELLANEOUS

RUFUS-RED BELGIAN HARES. Price list free. Harvey L. Stumb, Quakertown, Pa.

I GOT 100 pounds of comb honey per colony; my neighbors got none. I'll tell you how for 25c. O. N. Baldwin, Baxter, Kan.

THE BEEKEEPERS' REVIEW Clubbing List The Review and American Bee Journal one year $1.50. The Review and Gleanings one year, $1.50. All three for one year only $2.00. Dealers, or those wanting to buy honey, kindly ask for a late number of the Review having a list of 100 producers having honey for sale. Address,
The Beekeepers' Review, Northstar, Mich.

POULTRY

PURE WHITE and Blue Barred Homer Pigeons. Good breeders and mated pairs.
J. W. Hopson, Bedford, Iowa.

SINGLE COMB Brown Leghorns. Champions of the West. Over 300 prizes won. My quarter of a century record is free.
3A3t C. F. Lang, La Crosse, Wis.

FOR SALE—Single Comb Buff Orpington eggs for hatching, pure bloods; $1.00 per 15 or $5.00 per hundred. Satisfaction Guaranteed.
W. H. Payne, Hamilton, Ill.

UNTESTED QUEENS, 75c each; 7.50 per dozen. Tested, $1.50. Breeders (choice), $5.00. Nuclei, $1.25 per frame; good supply of bees, ½ lb. Bees (Italians) with untested queen, $2.00. One pound with untested queen, $3.00. Full colony in 8-frame hive, with queen, $6.50. Full colony in 10-frame hive, with queen, $7.50. Inquiries from jobbers solicited. Safe arrival and satisfaction guaranteed. Excellent mail and express service. Only twelve hours ride to St. Louis, Mo. Can ship March 20; probably March 10.

Pure Buff Leghorn and Ancona eggs for hatching, $1.00 per setting.

STOVER APIARIES
Mayhew, Mississippi

Beekeepers' Supplies and Fruit Packages

We manufacture the famous Sheboygan Hive, which always gives absolute satisfaction. Our perfect sections, made from selected white basswood, are recognized as the best on the market.

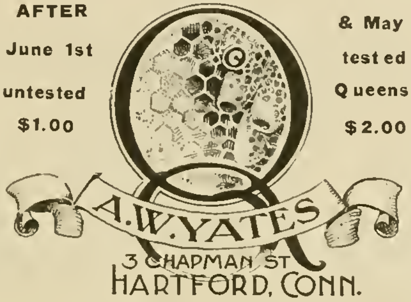
Catalog now ready for distribution. Write for copy.

SHEBOYGAN FRUIT BOX COMPANY, Sheboygan, Wisconsin

"NUTMEG" ITALIAN QUEENS
By return mail.

AFTER June 1st untested $1.00

April & May tested Queens $2.00



Write for prices by the hundred

FOR SALE

500 colonies of bees and a complete outfit comprising the following:

One-half ton 40 H. P. rebuilt Logan Motor Truck, in perfect running order; one 8-frame Automatic Power Extractor; one 1½ H. P. Engine for above extractor; one 4-frame extractor; one 2-frame extractor; one Peterson capping melter; one steam uncapping knife; 1200 sets of extracting combs; 200 extra empty hives; 300 queen-excluders; 150 comb-honey Danz. supers; 5 portable honey houses; one Hershiser wax press; one Underwood typewriter; 200 lbs. Dadant's medium brood foundation; 15,000 lbs. white clover and amber fall honey, and other articles needed to run a large bee business. For further particulars write—

Mrs. F. B. Cavanagh, Hebron, Ind.

HONEY AND BEESWAX

CHICAGO, Feb. 16.—Sales have improved in volume during the past 30 days, prices, however, are unsatisfactory in that they have a lower tendency, and some of the comb honey shows granulation, which renders it unfit for table use. Fancy grades sell in small quantities around 15c per pound, but the off grades are difficult to place at uncertain prices. Extracted honey consisting of white clover and basswood are rather firmly held, and sell at from 8@9c per pound, according to quality and package, but the western and southern grades of white are very dull and sell at from 1@2c per pound below these figures, and are most difficult to move in quantities. Beeswax sells upon arrival at from 31@33c per pound, according to color and cleanliness. R. A. BURNETT & CO.

NEW YORK, Feb. 18.—Our market remains in the same condition, dull and inactive. As to comb honey there is little demand for No. 1 and fancy white, while off grades, mixed and buckwheat are almost unsalable. During the past few weeks we have received several shipments of the last mentioned grades which we would rather not have sent to us at all. The honey is more or less candied, combs poorly filled, some not fastened to the comb and broken loose, and as the season is practically over with no demand to speak of, it will be hard work to dispose of these goods. We can not encourage shipments of off grades of comb honey, mixed or buckwheat at this time, for we feel sure that we cannot make a sale in a reasonable time nor satisfy the shippers, and therefore would rather not handle these grades at all. As to extracted honey, the only grades for which there is a demand at this time is fancy quality white clover which is selling at from 8½@9c per pound; all other grades are in poor demand. HILDRETH & SEGELKEN.

CINCINNATI, Feb 17.—There is no demand for either comb nor extracted honey at the present time. Nevertheless we would sell comb honey at $3.75 per case for fancy and No. 1, and 7½@10c for our white clover extracted honey. For our amber honey from 5½@8c per pound, acccording to quantity and quality. These are our selling prices. Kindly observe. For bright yellow beeswax we are now paying 32c a pound, delivered here. THE FRED W. MUTH CO.

KANSAS CITY, MO., Feb. 16.—The supply of comb honey is large, demand light. Supply of extracted honey fair; the demand also only fair. We quote our market as follows: No. 1 white comb, 24 sections per case, $2.50 to $2.65; No. 2, $2.00 to $2.25. No. 1 amber, $2.25 to $2.50; No. 2, $2.00 to $2.25. White extracted, per pound, 8@8½c; amber, 7½@8¾c. Beeswax, per pound, 25@30c.
C. C. CLEMONS PRODUCE COMPANY.

DENVER, Feb. 19.—Our local market is well supplied with honey, and our jobbing quotations are as follows: Strictly No. 1 white, per case of 24 sections, $2.70; choice, $2.57, No. 2, $2.43. Extracted, white, 8@9c; light amber, 7@7½c. We are in the market for beeswax, and pay 30c per pound in cash, and 32c in trade delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, *Mgr.*

BOSTON, Feb. 20.—Fancy and No. 1 white comb, 15@16c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c. BLAKE,-LEE COMPANY

WANTED

Honey!

Extracted and Comb

Will buy or handle on Commission

Beeswax

Will Pay Highest Pricse.

Yours very truly,

HILDRETH & SEGELKEN
265-267 Greenwich St., New York, N. Y.

3-BAND LONG-TONGUED RED-CLOVER ITALIAN QUEENS

FOR SALE.—My long-tongued Goldens are proving themselves to be the bee to clean Foul Brood. This is why I have such a large trade in Canada. Mr. E. L. Cox, of Jesup, Iowa, introduced 50 of my 3-band queens in Foul-Broody colonies in 1912; and he said the disease was cleaned up where each of those queens was put. They gathered such a large crop of honey in 1912 that he bought 50 more in 1913.

One Untested, 75c; 6, $4.00; 12, $7.50; 25, $13.50; 50, $25.00

Double the above for tested queens. Bees by the pound: One lb., $2.00; 2 lbs., $4.00. One-frame nucleus, $2.00; 2 frame, $3.00; 3-frame, $4.00. To all the above packages add the price of queen. I will begin to send out queens in April.

Positively no checks will be accepted. Send money by P. O. Money Orders. All queens arriving dead will be replaced if cage is returned by return mail.

J. B. ALEXANDER, CATO, ARK.

EXTRACTED HONEY

Just received car New Utah Alfalfa Honey, **8 1-2 cents** a pound f. o. b. Kansas City, Mo. **C. C. CLEMONS BEE-SUPP. CO.**
Department A, Kansas City, Mo.

MARCHANT'S

Island-bred Queens

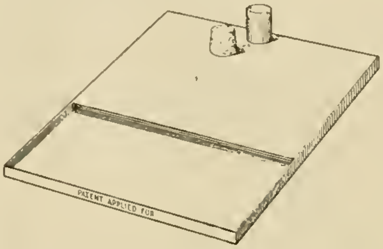
Bred from Selected Mothers

And mated to isolated drones of a different strain. My aim is quality and not quantity. So if you wish any of these choice priceless mated queens, order now or you may not get them, as I am only going to rear a limited number. Free from disease, and your money back if not satisfied. The A. I. Root Co. use my queens, which is proof of their quality. No need to write for a lower price. Reference, the American Exchange Bank of this city. Prices, Untested, $1.50; 6 for $6.00; 12 for $10 In lots of 25 or more, 75c each. Select Tested, $3.00; Breeders, $5.00 and $10.

A. B. MARCHANT
Apalachicola, - Florida

The Opfer Hive-Entrance Bee-Feeder.—Some of the many good points of the Entrance Feeder are these:

1. It is made of heavy galvanized iron and will last a life-time.
2. It reduces the hive entrance.
3. It reaches where the bees can get at the feed even in cool weather.
4. It feeds the right amount.
5. It will not cause robbing.
6. It will not disturb tbe colony while feeding.
7. It permits quick work.
8 The bees will not drown in it.



I am in a position to furnish all demands for these feeders at the following prices, f. o. b. Chicago: One for 20c; 5 for 18c each; 10 for 16c each. If ordered by mail, add 10c each for packing and postage.

Address all orders to—**A. H. OPFER,**
6259 Patterson Ave., Chicago, Ill.

Dixie Swarms

Direct to You in April

Stop and think for half a minute what a small package of bees or nuclei would do if put on those unoccupied combs early in the spring. The cost is just a drop in the bucket, and your 1914 honey crop may be doubled. Bees by the pound. Queens and nuclei shipped during April. Carefully selected stock. Excellent express and mail service. **Prices low.** Save money by writing at once, for our price-list and estimate on your order.

CONNEAUT LAKE BEE COMPANY
Meldrim, Georgia

ITALIAN QUEENS

Try Murry's Strain of 3-Banded Italian Queens

Best stock obtainable at any price. 18 years' experience as a queen-breeder. Satisfaction guaranteed or money refunded. 550 nuclei, besides 11 apiaries to draw from. Write for booklet, free. Tested queens in March. Untested in April.

Prices before May 10th:

Untested, 75 cts. straight; Tested, $9.00 per 100.

After May 10th:

Untested, one for 70 cts.; 6 for $4.00; 100 for $65.00. Tested, one for $1.00; 6 for $5.00; 100 for $80.00. Select Tested, $1.50. Breeders, $5.00.

Bees by the pound; One pound, $2.00; 10 pounds, $18.50; 100 pounds, $180.00.

Better let me book your orders now, for bees or queens in quantities. No disease.

H. D. MURRY, Mathis, Texas

Buy Carniolans in Carniola
Pure Carniolan Alpine Bees
Write in English for Booklet and pricelist. Awarded 60 Honors
Johann Strgar, Wittnach
P. O. Wocheiner-Feistritz
Upper - Carniola (Krain), Austria

ITALIAN BEES

Choice Home-bred Queens Reared In strong colonies.

PRICES FOR APRIL

One Tested Queen	$2.00
" Select Tested	2.65
" Breeder	4.00
" Comb Nucleus—no Queen	1.75

Safe arrival guaranteed.

For description of each grade of queens send for FREE catalog.

J. L. STRONG,
Clarinda, - - Iowa

Three-Band Italian Queens For 1914

I will again have for sale, after April 1st, young queens reared from my best Leather-Colored Breeders. You will make sure of improving your stock and securing a crop of honey if you introduce some of these queens. The Leathered-Colored Italians are recommended and used by the largest and most progressive bee-men of today.

Untested. $1.00 each; $9.00 per doz., $75 pe hundred. Select Tested, $1.50 each.

C. S. ENGLE, Beeville, Bee Co., Texas

Q-U-E-E-N-S

The Old Reliable 3-Band Stock

My queens are reared from imported stock which makes a beautiful bee. They are fine honey-gatherers, and very gentle. Try my queens. Send me your order, and if not satisfied will return your money. Safe arrival guaranteed. Untested Italian, 1, 75c; 6 $4.25; 12, $8.00.

N. FOREHAND, R. F. D. 2, Brewton, Ala.

Fresh Fruits for Dyspepsia

Constipation, etc. Try it. I did with fine success. My motto: More fruit, less starch. Also fine for healthy people; promotes longevity. Just as well raise 'em yourself. (Outdoor exercise helps, too.) Better start your beds this spring. The following list will give you a succession of the most healthful fruit nearly all summer: Strawberries, Glen Mary, early, large, 25c for ten; 70c for 100. Corsican, extra large, late, fine, 50c for ten; $2.00 for 100; hundred of each, $2.50; fifty of each, $1.35. We are the headquarters for the Plum Farmer Black Raspberry, hardy, early, large, good kind canners demand. Lucretia dewberry, Snyder Blackberry, 60c for ten; $2 50 for 100. Guaranteed strong plants, true to name. Government inspected.

Riverside Nursery, Berne, Ind.

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority

JANUARY 1 Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL Breeding.—Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1 Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-Page Catalog

Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

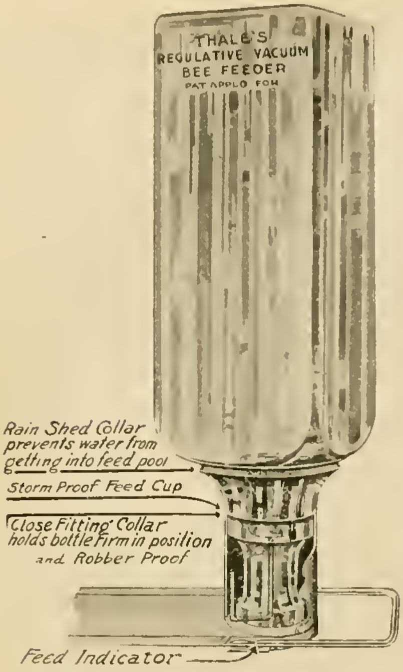
New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experinced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

C. H. W. WEBER & CO.

CINCINNATI, 2146 Central Avenue, OHIO

THALE'S REGULATIVE VACUUM BEE-FEEDER


THALE'S
REGULATIVE VACUUM
BEE FEEDER
PAT APPLD FOR
Rain Shed Collar prevents water from getting into feed pool
Storm Proof Feed Cup
Close Fitting Collar holds bottle firm in position and Robber Proof
Feed Indicator

THIS ILLUSTRATION shows the special designed bottle which controls the feed on Thale's Regulative Vacuum Bee-Feeder. This feeder is designed under the latest scientific method of controlling the feed by means of Vacuum and keeping the feed at a certain level, and in reach of the bees at all times. The slide is the means of increasing or decreasing the amount of feed. (See Feb, 1 issue.) This feeder is manufactured by the most skillful workmen, and its construction is perfect. Over 29,000 of these feeders were sold in January, and some of those who have received them have re-ordered more, and have expressed their opinion that this feeder will unquestionably be the most profitable investment for the beekeepers. The Chicago-Northwestern Beekeepers' Association which was held in Chicago Dec. 17-18, 1913, to whom I have described and demonstrated this feeder in detail and in use, gives the following endorsement:

WHEREAS, This Convention has been impressed by the exhibit of the Thale Regulative Vacuum Bee-Feeder, and believe that the same is a good device for stimulative feeding

THEREFORE, Be it resolved that the Chicago-Northwestern Beekeepers' Association in convention assembled, do heartily endorse the above device as a practical instrument for the beekeeper at large.

I. E. PYLES,
ARTHUR STANLEY,
W. B. BLUME.

I want over 100,000 of these feeders in use by June 1. I will ship you as many feeders as you need on ten days' free trial in your own apiary, and if these feeders do not work as represented, you may return them to me at my expense, and your money will be refunded. Send for free trial offer. Address, Free Trial Dept., A 94.

Send for feeder circular and bee-supply catalog. I carry a full line of Lewis Beeware and Dadant's Foundation. One of my Vacuum Bee Feeders complete with two bottles FREE with every ten-dollar order. Send me a list of your wants—it is no trouble to answer letters.

TERMS, CASH WITH ORDER

Sample feeder, with two bottles, complete by mail postpaid -	55c
Ten feeders, complete with one bottle, by freight or express, each	35c
All orders over ten feeders each only - -	30c
Extra botles with cork valve, each - - - -	10c

Eastern buyers send orders to Earl M. Nichols, Lyonsville, Mass., and B. H. Masters, Edison, Ohio

H. H. THALE

Inventor and Manufacturer

Box A 25

Maywood, Missouri

Organized Co-operation

THE WESTERN HONEY BEE

A new magazine owned and run by the bee-keepers, filled with Western life as depicted by the best talent on bee topics obtainable. Special department on crop and market conditions during season.

ADVERTISERS
Queen-Breeders' Department
1 inch, $2.00 per issue
Classified, 15c a line
Write for particulars

Published Monthly by the
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Los Angeles, Calif.
J. D. BIXBY, Editor,
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MAKE MORE MONEY
FROM
BEES

Blanke's Bee-Book Free

JOHNNIE-ON-THE-SPOT

DELIVERIES

When you order Bee Goods, you want them "now"—we are in the very heart of the Bee Section—no city with so good package car service—largest stock west of the Mississippi. Whenever possible, orders shipped same day as received—more carefully packed than ordinary.

Blanke's Bee-book Free.—a catalog filled with helpful tips for either beginner or old timer. Write today before you need supplies.

Department 1
Blanke Mfg. & Supply Co.
St. Louis, Missouri

SUPERIOR

GOLDEN QUEENS

Untested, $1.00; 6, $5.00; 12, $9. Select Untested, $1.25; 6, $6, 12, $10. Prices on application for tested and untested queens by the hundred. Address,

T. S. HALL, Talking Rock, Ga.

Honey in Tubes.—"Honey put up in collapsible tubes like tooth-paste, is a novelty in the German market."—*Popular Mechanics* for February.

ALSIKE CLOVER SEED

Small and large red, alfalfa, white and yellow sweet clover seed, timothy, blue grass, rape, millet, etc. Also seed corn.
Catalog of apiary supplies and seeds free

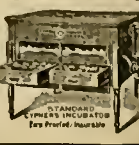
F. A. SNELL,
Milledgeville, Illinois

Add Poultry!
This Is the Profit Year

This is the year to take en poultry with your bee business. Our Free Bulletin service a complete guide. Never before was there such a demand for chickens and eggs and at amazing prices. Make sure of biggest profits with *proved* equipment.

CYPHERS INCUBATORS and BROODERS

World's Standard. Self-regulating; self-ventilating. Fireproof; insurable. Highest records for *big, continuous hatches.* Get Cyphers Company's 244-page catalog and poultry guide *before you buy.* Eight vitally helpful chapters. Send a postal *today.*



Cyphers Incubator Company
Dept. 83 Buffalo, N. Y.

MARSHFIELD GOODS

BEE KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

Make Your Hens Lay

You can double your egg yield by feeding fresh-cut, raw bone. It contains over four times as much egg-making material as grain and takes the place of bugs and worms in fowls' diet. That's why it gives more eggs—greater fertility, stronger chicks, larger fowls.

MANN'S LATEST MODEL BONE CUTTER cuts easily and rapidly all large and small bones with adhering meat and gristle. Automatically adapts to your strength. Never clogs. Sent on **10 Days' Free Trial.** No money down. Send for our free books today.

Free Book Tells How

F. W. MANN CO. Box 348 MILFORD, MASS.

Dittmer's Foundation

Is the **Comb Foundation** made to **suit the Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

Ask for more information; also prices and **FULL DISCOUNT** on all Bee-Supplies.

Gus Dittmer Company
Augusta, Wisconsin

PAGE-KENKEL MFG. CO.
Manufacturers
OF THE
"NONE BETTER"
BEE-KEEPERS' SUPPLIES

Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping-Cases. Brood-Frames. Separators, etc.
We invite your correspondence.

Guarantee—All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

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FOR THE BEST Early QUEENS

Send me your address for Italians and Carniolans. I BEGIN mailing Queens early in March. Untested, 75 cts. each. Tested, $1.25 each. Circular free.

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PHARR WANTS YOUR ORDERS FOR QUEENS

Goldens and 3-Banded Italians

For twelve years we have asked for your orders and we have gotten all we could fill and sometimes more. But we have ever tried to serve you right, and will guarantee similar treatment in the future. Prices of Untested, $1.00; Tested, $1.50; Breeders, 3.00 to $5.00. Write for prices in large quantities. Address,

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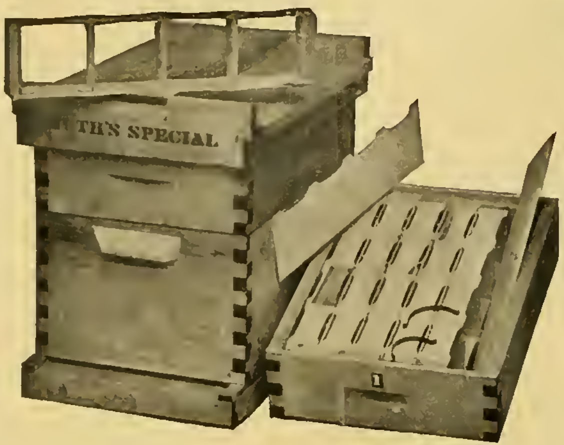
CARNIOLAN QUEENS

Carniolans are excellent winterers, build up rapidly in the spring, are very gentle, very prolific, cap their combs very white, enter supers readily, and keep their colonies strong at all times. Write for our **free** paper, "Superiority of the Carniolan Bee," explaining more fully, giving briefly best systems of management. Untested queens, $1.00 each; doz., $9.00. Full colony with tested queen, 8-fr. dove. or Danz. 10-fr., $10, in April.

ALBERT G. HANN, Pittstown, New Jersey
Carniolan Queen-Breeder.

M M

"Now, Then—Let's Talk Business"



SOON, you will need many additional Bee Supplies for the new season—Hives, Brood-frames, Comb Foundation, Honey-boards, Smokers, Bee-veils, Brushes, and whatnot. It is not too early to get your mind on this subject right now. Send for our new 1914 catalog—just off the press. A post card will do. It tells all about—

THE MUTH SPECIAL
Dovetailed Hive

This Hive has several remarkable features. The cover and bottom boards are of ⅞-inch material so rigidly constructed as to be absolutely warp proof. Besides this extra efficiency we have added a Honey-board directly under the cover, forming a dead-air space which excludes both cold and heat, making this the best wintering Hive on the market today, and far superior to others in summer. The boiling sun has no effect on the interior of this Hive, which is always comfortably cool, and prevents the comb from melting down. Another feature: When you take off the honey simply slide the Honey-board between the brood-chamber and the super, and the bees will clear out of the super by way of the Bee-escape. Price same as for the ordinary Hive.

THE FRED W. MUTH COMPANY

204 Walnut St. "The Busy Bee Men" **Cincinnati, Ohio**

P. S. Send us your old comb and cappings for rendering by our high pressure hydraulic press. It gets the last drop from the slumgum. Means money to you. Write at once for particulars.

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AMERICAN BEE JOURNAL

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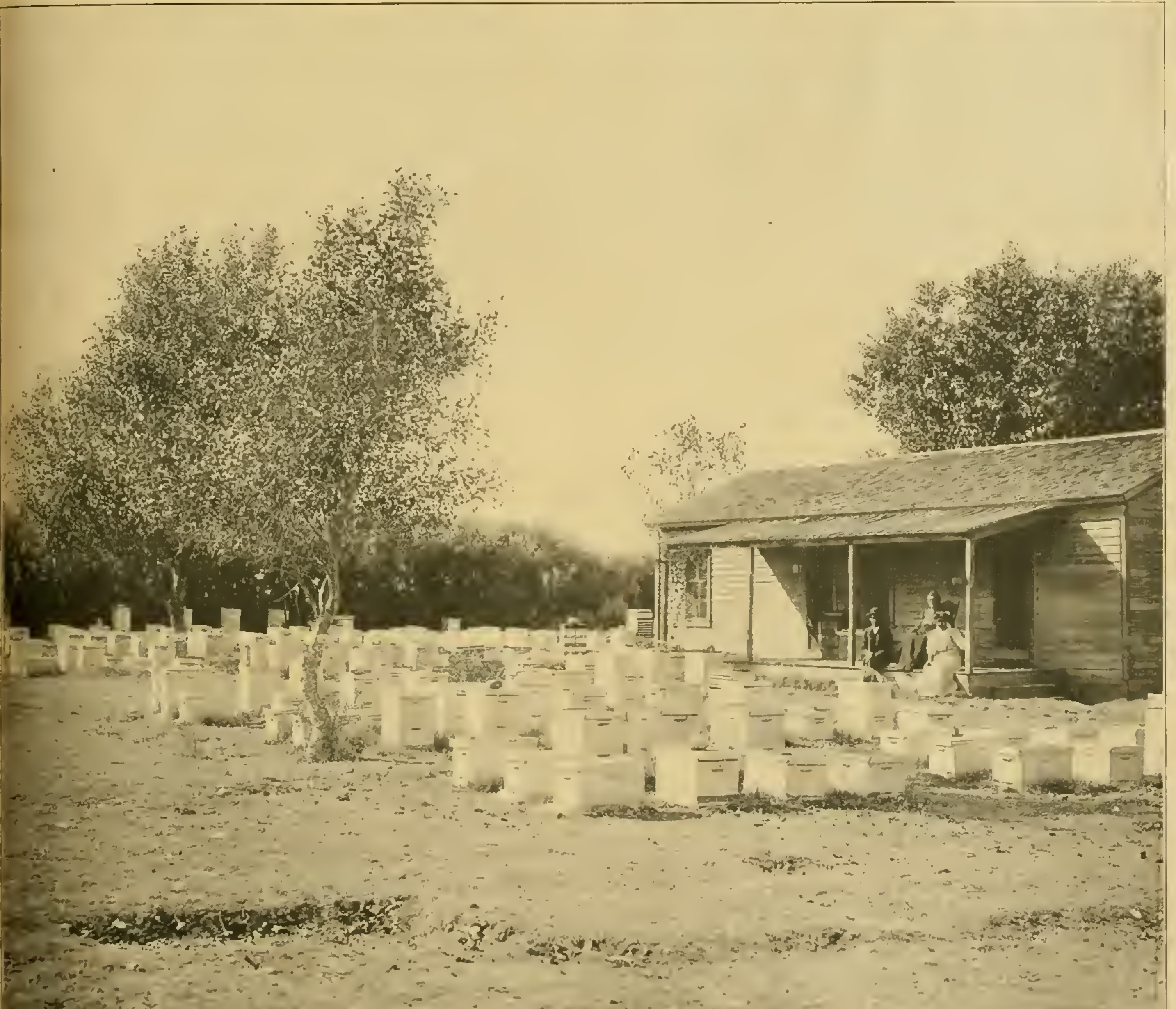

Apiary of H. Adams, at Hagerman, N. Mexico

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec13" on your label shows that it is paid to the end of December, 1913.

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Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

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Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens. Safe arrival guaranteed. Write

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EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections; no shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

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Everything for the beekeeper. Address.

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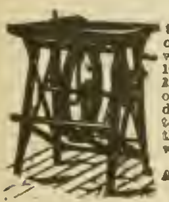

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Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in cap, 100 honey-racks, 500 brood-frames 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free

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From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, one, $1; six, $5; 12, $9; 25, $17.50; 50, $34; 100, $65. Tested, one, $1.50; six, $8; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two-frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

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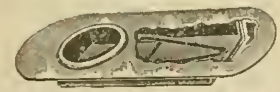

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Each, 15c; Doz., $1.65, postpaid

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Such as Winter-cases, Sections, brood-frames of every description, Section holders, Comb Foundation, Supers, Hive-bodies, Smokers, etc.
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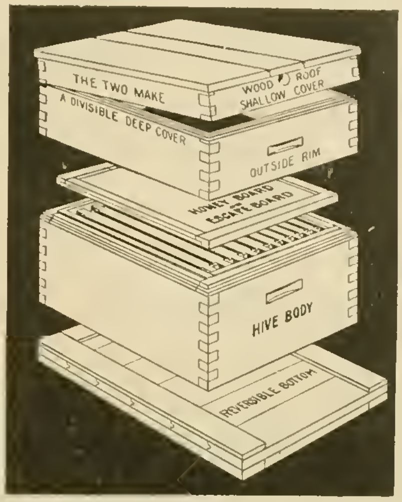

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The shallow Roof Cover and the Outside Rim make a divisible deep cover which can be handled together or in part. They eliminate the Chaff Tray nuisance, and the heavy bunglesome deep cover in manipulation. The Rim holds the overhead packing in winter and acts as a super protector at other times. This combination is the finest in hive construction on the market today.

Dead-air space or packing as you prefer; ⅞ material in the outer wall. Special circular showing 10 illustrations will explain all.

5 10-frame hives like cut....$13.00

A. G. WOODMAN CO.,
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WOODMAN'S SECTION FIXER

A New Machine of pressed steel for folding sections and putting in top and bottom starters all at one handling. A great time saver and a good job assured with ease. With top and bottom starter the comb is firmly attached to all four sides, a requirement to grade Fancy. Increase the value of your crop this season by this method. We want every one to try this machine. We guarantee satisfaction. Adjustable to any width, 4¼x4¼ or 4x5 section. Model received with much favor by recent Detroit and Chicago Beekeepers' Conventions. Price, $2.50 f. o. b. Weight, 5 lbs. Send for special circular showing large illustrations.

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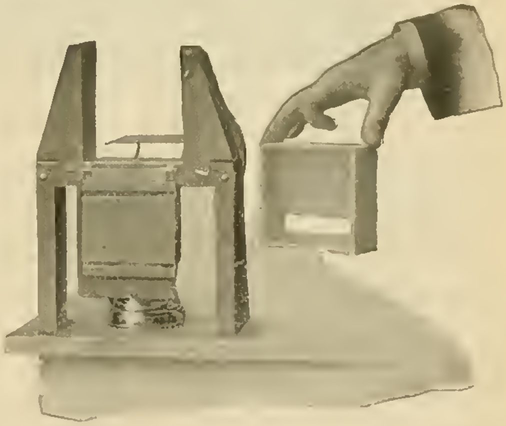

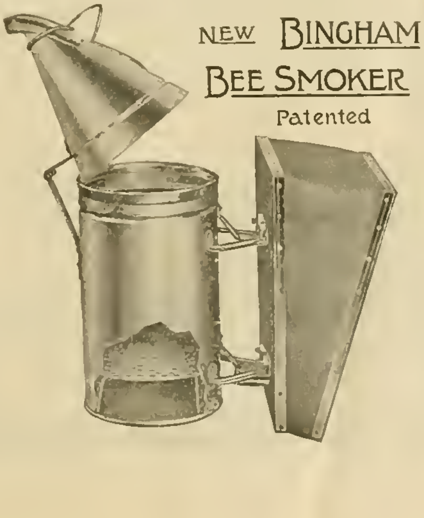

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Patented

The New Bingham Bee-Smoker

the all important tool of the most extensive honey-producers of the world. This illustration shows the remarkable steel-fire grate which such men as Mr. France, Mr. Rauchfuss, the Dadants and others say is the **best** on the market. The Smoke Engine grate has 381 holes for the air and draft, equal to an opening 2 inches square. Buy the large sizes and be pleased. For sale at your dealers or direct. Weight each.

Smoke Engine	4-inch stove....	1¾ lbs.	$1.25
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Two largest sizes with hinged cover.

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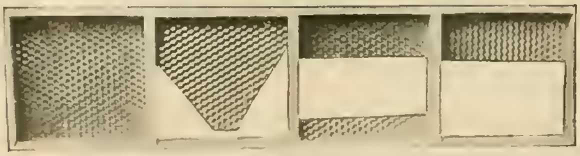
Everything for the BEEKEEPER



"Falcon" Foundation made in the "Falcon" plant at Falconer, N. Y.

SUPPLIES FOR 1914—Take inventory of supplies now and figure what you will need for a slim season. Get them ready at odd times in the winter; and if there is a good season you will have ample time to re-order in April and get them for use. We like to make 'Inventory Sales" of "**Falcon**" supplies, for we know that we are dealing with an up-to-date beekeeper.

INVESTMENT—What is the investment of an extra $25.00 in supplies to the loss of 500 pounds of honey? Resolve to change for 1914 and buy "**Falcon**" supplies now.

EARLY-ORDER DISCOUNT—For "**Falcon**" hives and supplies bought now we give an early-order cash discount equal to 12 percent per year. You see it pays for a strictly money basis. Write for early-order discounts, and send list of wants for quotation.

"FALCON" QUALITY—In making our beehives, all of our waste lumber is made into cheap toy building-blocks, so that we are able to put better material in our hives and goods. Get a trial lot this fall so that you can see for yourself, and still have time to order 1914 supplies.

FREE SAMPLES of our famous "**Falcon**" foundation, made in our factory at Falconer, N. Y., cheerfully sent postpaid with copy of catalog, and name of nearest dealer if desired.

FACTORY W. T. FALCONER MFG. CO., - Falconer, N. Y., U. S. A

Where the good bee-hives come from

BUY YOUR HIVES AT MANUFACTURER'S PRICES

The largest manufacturing plant of Cedar Bee-Hives on the Pacific Coast. Cedar is the best and most lasting wood for any climate. The prices for which we are to-day selling these hives is not even approached by any other first class hive made. Get our prices, they will make you smile.

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Quality Hill Queens

"The queens you'll eventually buy"

Buy Quality Hill famous utility queens, an excellent honey-gathering strain of light or dark Italians. Breeders selected for color among mothers exceeding average apiary yield. Drone mothers from the highest yielders only. Winter excellently here, and have proven especially resistant to foul brood. All queens reared in full colonies while fed; mated in 4-frame nuclei, which gives large, vigorous and prolific queens. Purity of mating, safe arrival, freedom from disease, and satisfaction guaranteed. Write today for booklet, "A Story of Success."

	May 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12
Untested	$1.00	$5.00	$ 9.00	$ .80	$4.75	$ 8.50
Tested	1.75	9.00	17.00	1.50	8.00	15.00
Select tested	2.75 straight			2.50 straight		

Write for breeders—$4.00 and up.
Reference: Plainfield State Bank.
5 percent discount on dozen orders—delivery after July 1.

QUALITY HILL APIARIES, - - Plainfield, Illinois

We Make a Specialty of Manufacturing SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

Please mention Am. Bee Journal when writing.

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Pay You to Buy Bee Supplies Now

29 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.

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LARGEST, BEST

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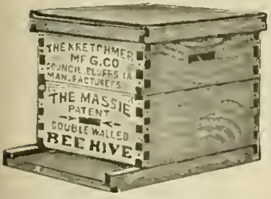
H. S. DUBY & SON, St. Anne, Ill.

The Double-Walled Massie Bee-Hive


THE KRETCHMER MFG.CO COUNCIL BLUFFS IA MANUFACTURERS
THE MASSIE PATENT DOUBLE WALLED BEE HIVE

THE MASSIE HIVE
For Comb or Extracted Honey

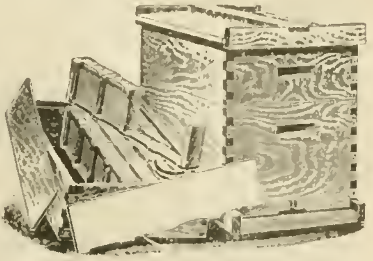
**Surest Protection for Bees—Increased Supply of Honey—
The Best Hive for any Climate**

Furnished in the clearest of lumber in either Cypress, White Pine or Redwood

THE MASSIE VENTILATED BOTTOM

Admits fresh air into the hive, lessening the chance of swarming, and giving renewed energy to the bees.

Fifty years in the bee supply business has shown us that the **MASSIE is the very best hive,** and testimonials to this effect are received daily from those who are using this hive.



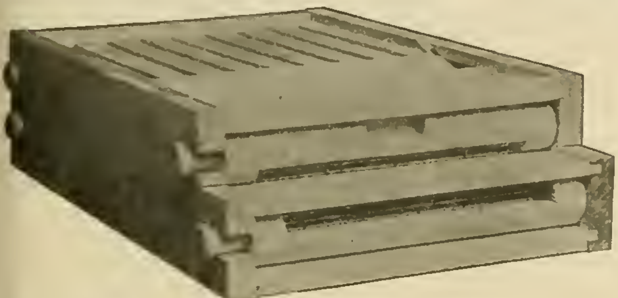
The Dovetailed Hive

WHY NOT GIVE US A TRIAL ORDER? **SATISFACTION FULLY GUARANTEED**

We are also extensive manufacturers of **Dovetailed Hives** and **all other Apiarian Supplies.** If you are in the market for supplies be sure to get our prices before buying elsewhere. We issue a 72-page illustrated catalog which will be mailed to any one upon request.

KRETCHMER MFG. CO., COUNCIL BLUFFS, IOWA

Features of Advantage of the
ROLLER ENTRANCE BOTTOM BOARD



1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.
2. It controls the mating of the queen so that mismating is prevented.
3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position.
4. It sifts automatically undesirable drones out of the hive, and cages them in the drone trap.
5. It permits ample ventilation at the height of the honey-flow.
6. It can be instantly closed when moving bees in and out of cellars or from one yard to another.
7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.
8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.
9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.
10. It is adjustable to make a shallow bottom for summer and a deep one for winter.

It contains many other valuable features which will be apparent to any beekeeper upon investigation, and if it is once tried it will always be used.

MANUFACTURED AT LIVERPOOL, N. Y.

CHAS. G. SCHAMU

TENNESSEE-BRED QUEENS

42 years' experience in queen-rearing—Breed 3-band Italians only

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	$1 50	$ 7.50	$13.50	$1.25	$ 6 50	$11.50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4 00	$ 7.50
Select Untested	2 00	8.50	15 00	1 50	7.50	13 50	1 25	6.50	12.00	1.00	5 00	9.00
Tested	2 50	13.50	25.00	2.00	10.50	18.50	1 75	9.00	17.00	1.50	8 00	15.00
Select Tested	3.00	16 50	30 00	2.75	15.00	27.00	2 50	13.50	25.00	2 00	10 00	18.00

Capacity of yard 5000 queens a year—Select Queen tested for breeding, $5

The very best Queen tested for breeding, $10. 300 fall reared tested Queens ready to mail, $2.50 to $10 each.

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed.

John M. Davis, Spring Hill, Tenn.

NEW ENGLAND BEE KEEPERS

Everything in Supplies
New Goods. Factory Prices
Save Freight and Express Charges
CULL & WILLIAMS CO.
Providence, R. I.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

**Colorado Honey-Producers' Association
Denver, Colorado**

W. H. Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

BEEKEEPERS' SUPPLIES

Write us for our 64-page catalog. **Free.** Full information given to all inquiries. Let us hear from you. We handle the best of bee-supplies for the beekeeper. Our shipping facilities are good. We cater to parcel post and express orders—none too small nor too large. Beeswax exchanged for supplies or cash. **John Nebel & Son Supply Co., High Hill, Missouri**

QUICK SHIPMENT OF QUEENS

of 3-band stock reared for honey-gathering qualities. **Untested, June, $1.00. Later, 75c. Tested, $1.50. Select tested, $2.** Send your orders now and be assured of having queens when you want them. **R. A. SHULTS, Cosby, Tenn.**

When You Buy

Lewis Beeware

YOU GET

Lewis Quality Which means that all Lewis Hives are made out of clear white pine, and Lewis Sections made out of fine white basswood. Material in these goods is the best obtainable, selected by experts.

Lewis Workmanship The Lewis Factory is equipped with the latest improved machinery, constantly watched by experts. The Lewis head mechanic has 36 years of bee-supply experience; the superintendent of bee-hive department, 30 years; the superintendent of sections, 29 years. These and many other skilled men have a hand in all the Lewis goods you buy.

Lewis Packing All Lewis Beeware is carefully and accurately packed—a patent woven wood-and-wire package made only by the Lewis Company is employed largely in packing; this makes the package light, compact and damage-proof.

Lewis Service Years ago all goods were shipped direct from the factory with attending high freight-rates and delays during the honey season; **now** Lewis Beeware can be obtained almost at your own door. Over 30 Distributing Houses carrying Lewis Beeware by the carload, are dotted all over the United States and foreign countries. Write for the name of the one nearest you.

Our New Catalog for 1914 is Now Out. Send for One

G. B. Lewis Company,

Manufacturers of Beeware,

Watertown, - - - Wisconsin

AMERICAN BEE JOURNAL

Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., APRIL, 1914

Vol. LIV.—No. 4

EDITORIAL COMMENTS

Educational—Honey-Bee Tablet

We are in receipt, from the New York State Association of Beekeepers' Societies, of a writing tablet for school use showing on its cover the queen, worker and drone, with an explanation on the verso or underside of cover, giving a brief natural history of the bee, a description of the nature of honey, etc. We would suggest that to it be added a few facts concerning the usefulness of bees in fertilizing flowers and an explanation of the impossibility of their damaging sound fruit, owing to the peculiar shape of their mandibles.

The spreading broadcast of useful information on bees in this manner is sure to bear fruits and to increase the demand for honey. Such primary methods of teaching facts should be encouraged, and we cannot commend them too highly. The New York State beekeepers are working efficiently at small cost.

A New German Bee-Book

We are indebted to the author for a copy of a text-book in the German language entitled, "Die Biene und der Breitwabenstock" (The Bee and the Wide Frame Hive). It contains 175 pages, with more than 100 illustrations, is written by Franz Richter, the writer of the Rundschau in Bienen-Vater, and can be obtained for 50 cents by addressing the author at Vienna, X., Kolumbusgasse, Nr. 1.

It is the first German book, the author claims, frankly to advocate American plans, and pleasantly resembles American books by being printed in the same type instead of using the German type. In Germany, a hive with frames measuring more vertically than horizontally is called Hochwabenstock (high-frame-hive), and one with frames measuring more horizontally than vertically is called Breitwabenstock (wide-frame-hive); hence the name in the title. The frame in the Richter hive is the Austrian standard: .84 inch shorter than the Langstroth, and .92 inch deeper. Richter quotes Dadant as saying that the Langstroth frame is too shallow, and says that this is remedied in the Austrian frame.

Mr. Richter makes a pretty big claim for his hive when he says a colony in it will store four times as much as in a Vereinsstaender, the tall hive largely used in Austria.

In this country the 10-frame Langstroth hive is made so narrow that it will not admit a dummy. The Richter hive not only admits one dummy, but two, one at each side. Score one for the Richter hive.

On page 120 occurs this passage: "The combs should not be too old nor too black, since colonies with such combs are late about developing in spring." One cannot help wondering on what ground such a statement can be made. The book should have a good sale.

Doctor Carton on Foulbrood

The readers will find among our contributions a lengthy and very interesting article on the above subject. Dr. Carton, whose portrait we also produce, is the well-known author of several learned books on clinical and bacteriological subjects, probably the most notable of which is entitled, "La Tuberculose Par Arthritisme." He is a pupil of Pasteur, the most wonderful bacteriologist of modern times. He has written a work in which he asserts that the "three deadly aliments" are alcohol, meat and sugar. The Editor met him in Europe, and received from him a promise to give our readers his ideas concerning "foulbrood." He is a beekeeper and interested in those questions. Probably few of our readers will entirely agree with the opinions expressed, but they will notice that Dr. Carton advises just the methods followed in America, and deprecates the use of drugs. In this we will agree with him.

Doctor Miller, who has read the Carton article, has this to say about it:

> It is well that attention should be called to the importance of keeping bees in the best physical condition so that they may resist the encroachment of malign influences, and especially is it well to call attention, as Dr. Carton does, to the danger of substituting sugar for honey as food for bees. He speaks of the "noxious" effect of sugar. He hardly means by that that sugar contains elements actively poisonous, but rather that sugar has a negatively noxious influence because of its lack of certain elements, as iron, which, although present in honey in minute proportion, are exceedingly important.
>
> Upon one point practical beekeepers will probably not agree entirely with what they will be likely to understand as Dr. Carton's view. He does not say so in so many words, but it sounds a good deal as if he said: "The germs of foulbrood are present everywhere, resisted by colonies of sufficient vigor, but ready at any time to pounce upon and destroy all colonies in a weakened

and debilitated condition." It is undoubtedly true that many germs, both good and bad, are to be found everywhere, but are the germs of foulbrood thus omnipresent?

For many years after the honey-bee was introduced into this country foulbrood was unknown. Is it believable that during all that time germs of the disease were alertly on the watch without ever finding a single colony anywhere in such poor condition as to allow them to effect an entrance?

Take a specific instance, the case of one of the veterans who began beekeeping many years ago. During all his experience of many years he had no personal knowledge of foulbrood. Then came years when he knew it was in the land, appearing here and there, but not in his neighborhood. Then it came to his knowledge that the disease was within a few miles of him, and a few years ago he found it in his own apiary. He had been on the alert for it; his colonies were in good condition; yet there it was, in good, strong previously healthy colonies. It is incredible that during the years of his novitiate there should never have been a colony in such poor condition as to offer an abode to those villainous germs prowling everywhere, and that such an abode could only be found after many years of waiting until the value of strong, healthy colonies had been fully learned, and that such colonies not until then offered a welcome to the miscreants.

As already said, it is just possible that Dr. Carton may not have meant what he appears to mean, and it is well to warn the inexperienced that he should put no false trust in the best sanitary care of his colonies, but watch even the strongest for the appearance of the foe.

The Weed Flora of Iowa

We have under our eyes Bulletin No. 4 of the Iowa Geological Survey, with above title. The book is very exhaustive, and contains over 900 pages, with 40 pages of index, numerous engravings, considerations on the structure of seeds, flowers, leaves and roots, the injuriousness of weeds, their migrations, weed and seed laws, etc. It is the work of Dr. L. H. Pammel, the eminent professor of botany at Ames, and author of a "Manual of Poisonous Plants."

This appears to be a very thorough work, and the cuts are excellent. There is but one thing for which we might be sorry concerning this most useful treatise. It is that the usefulness of such weeds as produce honey has not been taken into account, the only mention that he have seen of honey production from weeds being in regard to sweet clover, to which Dr. Pammel renders full justice. We notice that he places golden-rod on a parity with ragweed as to the baneful influence of its pollen on hay-fever sufferers.

We suggest that an additional study of the weed flora in regard to the usefulness of the honey and pollen production would be exceedingly interesting. It might also be published in the form of a bulletin. In the fight against weeds, it is well that we should separate those which prove useful in honey production from the thoroughly injurious ones like the ragweed. It remains for eminent workers like Dr. Pammel to give the country this additional information, and it is to the interest of the farmers that it be done.

Fastening Foundation with Putty Knife

C. B. Palmer writes: "I have been using this style of fastening for two seasons, and find it very good. We take the foundation and lay it on the section, dip a short, stiff putty-knife in common Karo white syrup, and press the foundation into the wood; the syrup prevents the knife from sticking to the foundation, and the Karo hardens at the edge of the foundation, and seems to make a tight and smooth joint. (Do not get the syrup under the foundation.)"

Mr. Palmer sends a sample, which shows a nice, straight job. The use of the putty-knife for fastening foundation in sections was superseded by the Parker fastener, which did at a single stroke what the putty-knife did at several strokes. Then the hot plate drove out the Parker. Yet the old method of fastening still comes nicely in play when in the apiary a section happens to be found in which a starter has fallen down; only in that case instead of a putty-knife the flat blade of a hive-tool is generally used, because more convenient, and for the same reason honey is used instead of Karo. Besides, it seems a sort of insult to the bees to offer them glucose, even in so very small quantity.

Making Honey Labels Stick

In the March number Dr. Miller stated that he had trouble with making labels stick on tin. We have since received several letters suggesting remedies for this, nearly all of them recommending the addition of a small amount of honey to the paste. Mr. E. S. Miller, of Indiana, writes:

"This is a problem that bothered me for a long time. By experimenting I finally found that by scouring the surface of the tin the labels would stick. Later I learned how to make paste that would stick without scouring. Use plenty of water in making a thin paste of flour or starch. Boil slowly and evenly. When partly boiled down add two tablespoonfuls of honey to each teacup of the paste. Continue to boil until thick. Use while fresh."

Mr. Parison, of California, suggests the addition of a small amount of fish glue instead of the honey. He also gives the formula for making a paste that will keep any length of time:

"Mix two tablespoonfuls of corn starch to ½ pint of cold water. Add one teaspoonful of fish glue and ½ tablespoonful of lye that has been liquefied in water. Cook until thick, stirring vigorously to avoid lumps. If it does not thicken properly, add a little more lye. This paste will not sour or smell."

NOTE.—If honey is used in the paste, care should be taken to use white honey, as a darker honey may discolor the label.

A Honey Day

One of the interesting points brought out at the February meeting at St. Louis, was the possibility of establishing a national "honey day" in which people would be urged to eat honey. Mr. Geo. W. Williams, of Redkey, Ind., said that Dec. 15 had been designated in Indiana as a "honey day." In a private letter to the Editor, he stated that in his opinion this helped to move some 40 tons or more of honey than would have otherwise been sold in the State. There is no doubt that a National Honey Day would help honey sales considerably. Let our beekeepers agitate this subject.

Foulbrood vs. Foul Brood

Some time ago we received the following from Dr. Miller, regarding whether "foulbrood" should be spelled as two words or one:

"When a man sees a bird of any kind which is black in color, we say, 'He saw a black bird,' writing the two words separately and putting the emphasis on 'bird.' If he uses the same two words to name a particular bird that he saw (a grackle), putting the emphasis on 'black,' then we unite the two words into one, and say, 'He saw a blackbird.' Same with blackberry, greenhouse, etc. In some cases there is an intermediate stage, and hyphen is used between the two words, but sooner or latter the hyphen is usually dropped, and the two words written as one. By analogy, when we use the words 'foul' and 'brood' to name a certain disease, putting the emphasis on 'foul,' we should write 'foulbrood,' and not 'foul brood.' If healthy brood is taken from a hive and left to decay, there will in time be foul brood, but no foulbrood. It would be well if this form should be used in all bee literature."

Just when is the proper time to drop the hyphen is hard to tell. For instance, bee-keeping is considered correct, yet it should be a word of common enough usage so that the hyphen may be omitted. We have omitted it in our columns for some time past. There is a tendency at present to omit the hyphen either by making separate words of the parts or by making all one word. Hereafter foul brood will be written as one word by us.

California Beekeeping

The American Bee Journal has recently made arrangements for a monthly contribution from the "Golden State." If the articles prove as "pleasant" as the name of our correspondent, everybody will be pleased. The first contribution is in the present issue.

MISCELLANEOUS NEWS ITEMS

Percentage of Germination in Sweet Clover Seed.—Our attention has been called to the fact that many people when ordering sweet clover seed of seed houses and elsewhere, will insist in their letter that the germination of the seed should be at least 80 percent.

It is interesting to note in this connection just what actual tests will prove with the average run of seed. Prof. J. G. Mosier, in the Prairie Farmer for Feb. 15, says:

"As a general rule sweet clover seed does not give a high percentage of germination because of the dense seed coat through which the moisture cannot penetrate readily. These are what is known as hard seeds. Nearly all seed contains considerable quantity of these hard seeds that do not germinate the first year.

"At the Ohio Experiment Station the average percent of germination of 37 samples tested by the botanical department was 29.14. This poor germination may be largely overcome by treating the seed with concentrated sulphuric acid for half an hour."

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Favorable Prospects—Small Losses.—Late winter reports coming in after most bees have had at least one good flight, indicate that losses in bees have been extra light so far, and that the bees should be in good condition for spring. Floods have done considerable damage in California, but prospects never were better for a good honey crop, and some of the older beekeepers are predicting a banner yield.

Texas floods have also subsided, and a season at least good enough to offset the failure of last year is expected.

The West reports few losses and excellent prospects, while in the central and eastern States, although bees are coming through in good shape, it is doubtful if the crop will be as good as 1913.

In our own locality clover seems *scarce.* Bees have wintered finely. Out of three apiaries totaling over 200 colonies, so far inspected, there is not a single colony lost, and the most of them are fairly well supplied with stores.

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Connecticut Meeting.—The 23d annual meeting of the Connecticut Beekeepers' Association will be held at Hartford, Saturday, April 18, 1914. Sessions 10:30 a.m. and 1:30 p.m.

Dr. Herbert E. Stockwell, of Stockbridge, Mass., ex-president of the Berkshire County Beekeepers' Association, will address us upon the subject of "The Theory and Significance of Immunity; *i. e.*, of Resistance to Disease as Applied to Bees."

Other features of the program are: "How to save money in buying hives and fixtures;" "Every man his own inspector;" latest methods of treatment," with demonstrations by Inspector Yates. Inspector Coley will open discussion upon the subject. "Management of a comb-honey apiary to prevent swarming," by L. C. LeMay.

Discussion—"Smoke introduction of queens." "Advantages of a let-alone hive and how to manage." Demonstration by Allen Latham. "Comparative merits of 8-frame and 10-frame hives for comb honey in localities of Connecticut," A. W. Coley.

Please bring for display and demonstration any invention, implement or method you may have. Space and tables will be provided.

A special invitation is extended to fruit growers to attend.

L. WAYNE ADAMS, *Sec.*

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Amendments to New Zealand Act.—In 1908 and 1909 Mr. Isaac Hopkins, Government Apiarist for New Zealand, recommended amendments to the foulbrood law in order that the good work which had been accomplished might not be nullified. These recommendations have but lately been adopted and made a part of the law. Some of the more important of the new features are: compulsory annual registration of all apiaries, strict supervision over imported bees and appliances, periodical inspection of queen-rearing apiaries, and prohibition of selling queens from apiaries in which foulbrood exists.

The inspectors of the province are supplied with motor cycles so as to facilitate their work.

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Death of Alexander Schroeder.—We regret to report the death of Mr. Alexander Schroeder, which occurred in Trieste, Austria, during the early part of February. Mr. Schroeder was an expert linguist and an extensive traveler. Some of our older readers will probably recall contributions from him which appeared in the American Bee Journal from time to time.

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Our Front Cover.—On our cover page we give a photograph of the apiary of H. Adams, of New Mexico. This apiary consists of 160 colonies, the hives being arranged in clusters of 9, 3 facing in each direction. Mr. Adams states that this arrangement allows him to work with 9 hives without much

APIARY OF J. B. HOLLOPETER, AT PENTZ' PA.

change of position and without getting in front of a single colony. It also has the added advantage that young queens returning from their mating flight are less liable to get lost by entering the wrong hive.

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Visit from A. H. Fralick.—We acknowledge a visit from Mr. A. H. Fralick, veteran beekeeper of Homer, Minn., on his way home after having spent the winter in Florida. Mr. Fralick has purchased property near Bradentown, Fla., and expects to spend his winters there, but he prefers the North when it comes to keeping bees and getting honey.

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A Curious Use of Honey.—Mr. J. Escard, in the Revue Scientifique, cites the curious use of honey made, in the Palatinate, by the gem-cutters. In this region, where gem-cutting establishments are numerous, the agates, called bathed agates, are prepared as follows: After washing and drying them, they are placed in a solution of honey in which they are left for a long time. The liquid penetrates slowly into the fissures according to the porosity of the stones. When the imbibing is sufficient, the stones are washed and put into a bath of concentrated sulfuric acid. This acid slowly burns out the honey and produces carbon residues which pleasingly marble the agates.—*Revue Francaise d'Apiculture.*

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Winter View of the Hollopeter Apiary.
Hives in pairs are usually packed in one case.

Death of Aaron Snyder.—Mr. Aaron Snyder, a noted New York beekeeper, of Kingston, died on March 3, 1914, in his 71st year, of cancer.

He began keeping bees when he was 16 years old, and continued until his death. In 1889, he moved from Albany Co., N. Y., to the city of Kingston; here he continued to run from four to five apiaries, one being at his home on the edge of the city, and the others within driving distance, from 2 to 6 miles away.

Mr. Snyder was a good practical apiarist. He had an inventive mind and made many changes, and used many kinds of hives. Within the last few years he produced mostly comb honey, but lately changed to extracted with success.

His choice of hive was a 9 or 10 frame hive with extracting supers half the depth of the hive. He believed in selling his own honey. He kept agents on the road as salesmen, and bought honey in addition to what he produced himself to supply his customers. He put his honey up in 1-pound bottles and 5-pound pails.

At one time Mr. Snyder had foulbrood, as had all of his neighbor beekeepers for miles around. Mr. Snyder sent for me, and I went and helped him and his neighbors to get cleaned up. Some, of course, lost their bees. Mr. Snyder was one who cleaned up and saved almost all of his bees, and there is not much foulbrood around there now. He has since thought well of bee-inspectors, and often expressed his appreciation of the work that the State has been doing for the beekeeping fraternity.

N. D. West.

Another View of Mr. Hollopeter's Apiary—Colonies are Arranged in Pairs.

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Cyprian Queens.—We have several enquiries from subscribers asking where they can obtain Cyprian queens. Any one who can furnish the pure stock will confer a favor to our subscribers by letting it be known.

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Meeting of the Kansas Beekeepers

The Kansas State Beekeepers' Association is growing in importance. At its meeting of Feb. 26–7, which was attended by our Editor, a number of important subjects were discussed, chief among which is foulbrood. This disease is bringing beekeepers closer together, and proves the truth of the old adage: "It is an ill wind turns none to good."

Professor Geo. A. Dean, Entomologist of the Kansas Agricultural College at Manhattan, read an able paper on "Insect Enemies and Diseases of Bees."

We are glad to be able to say that from the consensus of opinion there is less disease now in Kansas than formerly. But a unanimous desire was expressed to secure an appropriation for the continuation of the work of inspection. In this State as elsewhere beekeepers are convinced that the most good can be done by inspectors from an educational standpoint. Suggestions are more effective than compulsion, and there is but little difficulty in convincing rational men that it is to their interest to eradicate the disease as promptly as possible. The main requirement is to show them how this is done.

A few facts peculiar to Kansas were brought out. Alfalfa growing is said to be spreading very fast over the State, and it has been repeatedly proven that a good crop of seed may be secured from it only when bees are numerous in the vicinity. This is not a new fact, but it is well to repeat it.

The lack of hollow trees in this prairie country for the harboring of runaway swarms, was set in evidence by the report of C. M. Randall, of Topeka, who removed 63 swarms from the walls of frame houses in one year. As many as 3 swarms were removed by him from a single house.

Mr. Wayland Dunham, a high school student, read a very interesting essay on "Bees and Beekeeping."

Dr. Bohrer's essay on "Foulbrood," caused much comment, for it covered the ground fully. Dr. Bohrer is now 81 years old, and the oldest living member of the National Association, of which he is a charter member.

The officers elected are: O. S. Mullin, president; C. S. Kistler, vice-president; O. A. Keene, secretary-treasurer.

Prof. Dean, the State Entomologist, assured the members that an effort would be made to organize a class in beekeeping at the Agricultural College.

A photograph of the meeting was taken; rather too late, however, as a number of members had already left. We give it in this number.

All Kansas beekeepers desirous of joining this association are requested to write to the secretary, O. A. Keene, 1600 Seward Ave., Topeka.

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Obituary—F. B. Cavanagh

Fred B. Cavanagh was born Dec. 19, 1880, and died at his home in Hebron, Ind., Feb. 12, 1914. His father died in 1904, leaving his mother with three brothers and three sisters to survive. With them the widow remains to mourn his death.

THE LATE F. B. CAVANAGH.

When but a boy he became interested in bees, and decided to take up beekeeping as a life work. Imbued with active energy, he made the bees pay his way through a college course so that he might be better fitted for a business success.

Mr. Cavanagh then took up bee-keeping in Michigan. In 1906 he was married to Miss Mabel Wilbur. In 1908 they moved to Hebron, Ind. Here the business rapidly grew until at the time of his death he owned and operated nearly 500 colonies of bees.

In all his undertakings Mr. Cavanagh was thorough. He experimented with different methods of wintering until he found the one best fitted to his needs, then stuck to this. He was one of the first to advocate the automobile for out-yards, using in connection a trailer for hauling supers, etc. Later an auto truck was used.

Throughout his business career he made many friends and gained the confidence of his acqaintances by his honesty and industry.

Mrs. Cavanagh will not endeavor to continue the business, but is offering for sale bees, supplies, and everything connected with the extensive business of her late husband.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

The Season's Outlook

In many locations in south Florida bees were swarming the first of March, but it is different outside of this section of Dixie. The progress in brood-rearing or building up for the first flow is from two to three weeks behind that of average seasons, due to the extreme cold weather which has continued for 30 days.

Up to this time bees seemed to be making the usual progress, but steady cold winds, snow, sleet, rain and ice and freezing weather have put and end to this progress, for the bees have been confined to their hives. None of our greatest honey-plants has budded yet, so the results may not be as bad as expected. But my experience is, where bees have made such a good start under such favorable conditions, and then have been set back, the second start will not be so great, and if the spring opens up quickly, and the honey plants come out, the bees are not so well prepared for the harvest. Some of my apiarists who have charge of bees where they have a good flow the latter part of February, report the bees three weeks behind in building up, and the first honey plants just blooming. In cases of this kind the honey-flow is a total loss to the beekeepers.

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Death of Our Foreman

As the city clock was striking nine on the evening of Feb. 16, the spirit of our manager of apiaries, Dave Reeves, passed into the great beyond. He was sick only a few hours, and was looking after my interest here at Cordele while I was taking my much needed rest during the winter at Bradentown, Fla.

As soon as I received notice of his sickness, I left Florida and hurried to his bedside, reaching it only a short time before he expired.

Mr. Reeves was less than 21 years old at the time of his death, coming to me to work while he was yet a boy. Almost his last words he bade us to push on with our work, then with tears running down his cheeks, in a low voice he said, "I wish I could be with you."

Mr. Reeves, beyond a doubt, covered more ground in beekeeping than any predecessor. He headed the work of harvesting our enormous crop of honey last season from 3000 colonies in 51 yards, scattered at intervals for 200 miles. He was a lightning operator, making the rounds to all apiaries from four to six times during the season, overseeing and planning the work, spreading brood in the early part of season where it was necessary, and looking after the weak colonies.

He made most of the increase, did a lot of requeening, changed storing room around, and left at each apiary instructions for work to be done, so the man in charge could see to the balance.

After he had seen all the honey removed, packed and shipped, and bees put away for winter, he located at Cordele, and headed the making of supplies for 1500 colonies increase the coming season, cutting out all the fixtures from the bottom-boards to the covers. Three cars of necessary supplies for increase had been sent to different parts of the field.

He made fewer mistakes than any one who has ever come under my employment. His ideas were always bright. His place in the business will never be so well filled. We have sustained almost untold loss in his death. He was truly a talented apiarist.

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Apiary Work

During favorable weather in early spring bees will build up readily if they have plenty of stores and good queens. Otherwise they will lag and must have more attention, or they will not be strong enough to reap a harvest by the time the early or main honey-flow comes.

I am not an advocate of stimulative feeding, even to encourage brood-rearing in the spring; this partly on account of the fact that our weather cannot be depended upon. If a cold and dismal spell comes during the stimulation, the bees are apt to get dysentery and weaken. On the other hand, if conditions are too bright, the sun is warm, etc., the stimulation is apt to cause an excess of swarming.

Should stores run short, owing to the bees being put into winter quarters with a very limited supply of honey, they should be fed to avert

Members in Attendance at the Kansas Convention at Topeka in February.

starvation, keeping stores well equalized, and keeping a close watch on the brood-nest. As soon as the queens start to laying well, keep them at it by inserting empty combs in the middle of the brood-nest, and if such frames contain some honey along the upper edges all the better. This should be kept up until the brood-nest is well occupied by the queens, then add supers as fast as the bees enter and start well at work in them, inserting the empty supers under those already on.

What I mean by equalizing stores may not be understood by some. It is simply taking frames of honey (not live bees) from hives which can spare them and giving them to those which may be lighter or contain but little honey. In turn the empty combs from the lighter hives are put in the middle of the hives from which the honey was taken. This will cause the heavier ones to rear more bees, and the weaker ones will be stimulated to greater activity by being supplied with stores. This means more in the way of harvesting honey than the average beekeeper is aware of.

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Is a Bee-Estate Easily Disposed of?

This is a very important question to those who own large bee-estates or those who contemplate doing so. In rare cases such an estate might have to be disposed of at a sacrifice; but in the majority of cases the reverse would be true. A well established bee-business is a good investment, and if no member of the family who owned it would care to take up such a business after the owner's death, it could easily be disposed of at a good figure.

This question troubled the widow of the late Mr. R. W. Herlong, of Florida, who died leaving a large bee-estate, but it was not long before Mrs. Herlong learned of a number of buyers, and soon closed the business out at a good profit.

There is a much greater demand for a well-established bee-business than for just a small lot of bees. From a paying standpoint it is better to buy a well equipped and established business when one has available cash. My wife used to say to me often, "What could I do with all the bees should you die?" I told her to have them worked on shares. But what about it now, should such be the case, or should I decide to sell? The deal or sale would be made and confirmed in short order. There are many people who know me, and have some idea of the output of the business, and who are anxious to take stock at the first opportunity, and no doubt such is the case with beekeepers who have a similar business.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Grey and Grade Italians

What are the grey Italians, and where are they procurable?

A few days ago I heard of grade Italians, which are reared in California in the plateau of the mountain Shiala Nevada. If you know of them please let me know in what point the grade Italians are superior to other breeds of bees?

Knni Wada.

Japan.

It would seem that there must be some mistake about the grey Italian. Yellow is the distinguishing color of Italians. Pure Italian stock shows three yellow bands on the abdomens of the workers. In America Italians have been bred with four or five yellow bands, but there is no tendency to grey. There are also what are called albino, having bands quite light in color. These approach more nearly to grey than those previously mentioned, yet they are never called grey Italians. Is it not possible that Carniolans, not Italians, are meant? Carniolans are favored by some, but in general they are not considered equal to Italians. They have an unenviable reputation as great swarmers.

Miss Knni Wada.
A leading woman beekeeper of Japan.

A grade Italian is probably what is usually called hybrid; that is, a cross between Italian and black bees. These grades, or hybrids, are not generally desired, yet they are the most common of all bees in this country, because at one time only blacks were here, and since the introduction of Italians there is always a tendency toward a mixture of black blood. Hybrids are likely to have bad tempers, some of them stinging viciously. The first cross may be just as good workers as pure Italians, but they do not have the same fixed character, and succeeding generations are likely to deteriorate.

On the whole, no kind of bee has given such universal satisfaction in this country as pure 3-banded Italians, and the likelihood is that you will find nothing better for Japan.

Please accept very hearty thanks for the pictures. It will be a great pleasure for the readers of this department to look upon the face of a sister in faraway Japan, and to look upon your beautiful apiary, even though they may not read the characters at the right. Pity they cannot all see your beautifully clear writing of the English language, which very few of them can equal.

Please do not let this be the last we shall hear from you and your bees.

Questions and Experiences

I began keeping bees last spring with one colony to start with. I now have 11. I secured 150 pounds from one colony, and very near the same from another; the rest were too late to gather any surplus honey. We are using the large hives, 20x26, but they are very heavy for one person to handle.

1. Are they too large to work well?
2. Can a hive be painted on the inside, or would it hurt the bees in any way?
3. I have a swarm of bees in the house which was taken from a tree late last fall, and I am not sure if we got the queen. Will they build worker comb if they are queenless?
4. They are doing well. I feed them every other day with warm honey. Is that often enough? I think the world of my little dumb friends, and we get along nicely. It is very seldom I get stung. I give them all the fresh water they can drink on hot days; when they see the pail they almost cover me sometimes.

I never saw an apiary in my life or had any dealings whatever with bees until last summer; but I often wished I had a few colonies. Finally I got my wish, and I am not a bit sorry, as we get along nicely together.

Mrs. Wm. F., Iowa.

Answers.—1. The hive may be too large, and it may be too small. You give only the length and width, without saying anything about the height. It is not very likely that it is shallow enough to be too small. You had one colony to start with last spring, and now have 11. If you bought no others, and the 11 came from that one colony, with 160 pounds of surplus from one colony, and nearly that from another, perhaps 300 in all, you surely had immense success, and that is pretty good proof that the size of the hive is all right.

2. It is practically certain that painting inside would do no good, else there would be some who would thus paint. Very likely it would not make a great deal of difference; but some think it would do harm. Indeed there are some who think it is better for the bees that no paint should be even on the outside.

3. A queenless colony will not build worker comb, although a weak nucleus may build such comb if it builds any. But if you find a colony of anything like ordinary strength building worker comb, you may rest easy that it has a queen.

4. It would be better not to feed so often as every other day. Indeed, in cold weather, it is best not to feed at all, but to have enough stores in the hive so no feeding is needed till warm weather comes.

You are surely to be congratulated on your success. A woman who knows enough to manage bees so successfully must know how to vote.

Does Soil Influence Nectar Flavor and Color?

"Mr. Chadwick argues that locality and soil do not influence the color or flavor of nectar. We are sure he is wrong, for usually golden-rod honey is a dark inferior honey scarcely fit for bees to winter on, yet here with us it is a beautiful golden and delicious. Our customers demand it in preference to our white clover honey, which is extra nice.

"The soil here is light and sandy. A few miles from us where the soil is hard clay, the golden-rod honey is very dark and inferior in flavor. Same way with potatoes; we have often sold potatoes 10 cents per bushel above the market price because of their being grown on sandy soil. Apples are more highly colored and better flavored than those grown on clay.

"Arden, Neb. Emma S. Mills."

Swarming During the Record Crop

Inquiry has been made as to what we did about swarming while getting our big crop last year. We followed the plans given in "Fifty Years Among the Bees," not adhering strictly to any one plan. The year was a bad one for swarming. Some say that when a heavy flow comes on the bees get so interested in storing that they give up swarming thoughts. That was not the rule in 1913—perhaps never—in this locality. Never was there a better flow, and never was swarming more troublesome than in 1913. Bees swarmed early and late, and often.

About once in 10 days examination was made for queen-cells. So long as only eggs or quite young larvæ were found in the cells, they were destroyed and nothing more was done about it, but if, after 10 days, larvæ were found sealed or nearly ready to seal, or if, as too often happened last year, a swarm issued, then the colony was treated. In some cases we caged the queen for 10 days. In most cases we used the put-up plan. Two or more frames of brood, perhaps all the brood, with a force of bees, were put in a hive with the queen and set on top of the supers—no communication between—and in 10 days these were put down again, all cells in the lower story being removed. In some cases the bees swarmed again within a very few days—a thing that does not often occur other years, and then the queen was caged for a few days longer.

A few colonies were run for extracting combs, and in some of them the Demaree plan was used; when there was danger of swarming all the brood, except perhaps one frame, was put into a second story, and the queen was left in the lower story, this lower story being filled with foundation or drawn combs. A queen-excluder was between the two stories. As the brood hatched out in the upper story, the cells were filled with honey. This is an excellent plan when extracting combs are used, but of course does not work with sections.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

More About Beginners and Conditions in the Beekeeping Industry

Judging from letters I have received relative to that item in the February American Bee Journal entitled, "Honey Production as Ranked with Other Business," personally it is a case of "fools rushing in where angels fear to tread." Men have written me from far off Washington in the northwest, and Texas in the southwest, to say nothing of all other points of the compass nearer home, and without exception all are enthusiastically in favor of the views I expressed. *But* a lot of these writers warn me to look out or the "fellows with an axe to grind will get me," and being naturally slow to take a hint, I hardly understand what they mean. Large producers, including presidents of State associations, have written me. While surprised at such a response, I am gratified to find that I am not alone in taking what some might call a reactionary step. I am sorry that "Optimist" has not given his address, for not knowing who he is, I am at a loss to know how to take him; really, I feel that he is just *joking* in some of the things he said.

First of all, I want to say emphatically that it is none of my business how many enter the business of beekeeping *voluntarily*—don't misunderstand me on that point. My contention is that beekeepers who depend upon the business for a living, and the associations they are affiliated with are doing a foolish thing when they try to coax and encourage others to enter into the business and increase competition, especially when production is already in excess of demand. It is not fair to the men already in the business, and it is just as unfair to encourage others to come in when the prospects are not good for them to succeed financially.

If "Optimist" is no nearer correct in all his claims than he is when he wonders if I am not planning to increase my colonies in 1914, he is much mistaken. Aside from winter losses, I expect to have at least 100 colonies less this year than last. As to nectar going to waste in some localities, that has happened for ages, and no one will be held guilty of a heinous offense for neglecting to try to gather all this nectar even if there were no market for it.

Some places are overstocked now in Ontario, as many know, and more than that, many beginners fostered by the help of the Ontario Association and the Department at Guelph, are causing this overstocking by starting up beside men who have been in the business for years. Of course, "Optimist" will say that is all right; from his remarks he is such a stickler for "sentiment" that the baser things, such as the necessity of a man feeding a family, should not be taken into consideration. Unfortunately sentiment of this kind, like love, while decidedly pleasant and desirable, does not go far in filling an empty stomach.

"The more honey there is on the market the cheaper it will be," quotes our friend. No one disputes that phase of the argument. It is utterly foolish to try and make honey cheaper than it is now, when at present prices it is lower than nearly all other lines of food products.

"Optimist" asks, with the large increase in members, will we not get legislation easier than before? I don't know, and at the present moment I feel tempted to say I don't care. I do not believe the extra membership obtained is worth all the work and money it cost. Many of these members came in at 50 cents. We gave them a journal as a premium that costs us 70 cents, to say nothing of the cost of carrying them along. The balance came in at $1.00 each, so that leaves 30 cents to their credit. After all, what does a very large membership mean in the way of benefits? Candidly, I don't know.

"Optimist" is "playing to the gallery" when he mentions the fact that Dr. Kramer, of Switzerland, has 9543 members, and "they all seem to succeed, too." A smarter bunch evidently than we could get on this side of the pond. Does my friend not know that a very small percentage of these beekeepers depend upon the calling for a *living?*. One of my correspondents stated in his letter that there are some who would have us be like scores of European beekeepers, who carry their crop of honey to market on their shoulders.

Before closing let me quote extracts from a letter received March 13. The writer is one of the best known men in the United States, but as the letter is marked private, I cannot give his name. Among other things he says: "Honey producers had better increase the demand for honey than the supply. In act, it would be better for them if the demand exceeded the supply, as the price would then take care of itself. In my opinion this should be the chief object and work of all beekeepers' organizations." "The keeping of more bees, making of more beekeepers, and producing more honey will be well looked after by the manufacturers of bee-supplies." All honey producers who have discovered methods of doubling the honey production, should be advised to put such methods into cold storage until the demand for honey is equal to the supply, or keep more bees."

No doubt "Optimist" will call me a selfish mortal, and perhaps he is correct, for I believe that self-preservation is the first law of nature. Perhaps he will call me a pessimist as well, but in this he will be entirely mistaken. All who know me personally, while they cannot help but know that I have a lot of failings, will at least give me credit for being a "cheerful idiot." As to selfishness, I have answered hundreds of letters from beginners in every province in Canada, and nearly if not all the States in the Union, and while I have never made wild claims as to the possibilities of the business, if I have ever written discouragingly to a single one of these people I wish he would remind me of it. In conclusion, let us just use plain common sense in this matter, and for the time at least leave gush and sentiment alone until we have something more encouraging to warrant us in persuading people to go into beekeeping for a living.

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Weather Conditions and Wintering

The frigid weather mentioned in the March issue continued through February, and March up to date has been colder than usual. Although bees had their last cleansing flight on Nov. 23, and have since passed through so much very cold weather, they appear to be holding their own fairly well, judging by external appearances. Nearly all colonies I have peeped into by lifting the quilt under the packing, are nicely clustered and apparently little the worse for their long confinement. Of course, it is too early to say how the bees will come out, but I am not looking for any great loss. Once we get to the middle of March we hope for fine warm days, so that we can see the bees on the wing once more.

While we have had little snow all winter, the cold weather has kept what we have from melting, with the result that (March 13) the fields are still covered. This means that what little clover we have (alsike) will be apt to stand the winter fairly well, and be in better shape to weather the trying times later on when we have thawing by day and freezing by night.

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Association Did Not Attempt to Sell Honey

While I agree with the sentiments expressed by R. F. Holtermann, on page 94 of the March issue of the American Bee Journal, I would remind our friend that he is in error when he says that the "Ontario Beekeepers' Association" undertook to sell honey for the members. I was in sympathy with the effort referred to, and think the work was commendable, but the *Association* deserves neither thanks or criticism for anything that was done, as Mr. Pettit and some of the students at Guelph, Mr. Weir in particular, undertook this work on their own responsibility. The executive had nothing to do with the effort. Please do not give the Association any honor for work it did not do, and at the same time also refrain from censuring it when not guilty, for goodness knows it has enough to answer for without being blamed wrongfully.

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Saner Methods for the Future

After all, friend Holtermann, don't you think your article smacks a bit too much of the "I told you so" principle? I am willing to admit that you have at times tried to "put on the brakes," yet in common with many of the rest of us, you might have done better. It is always easy to see the necessity of locking the stable door after the horse is stolen. While we cannot help the

A Woman Apiarist of Japan. With a Section of the Apiary.

past, I hope the lesson we are now learning will bear fruit, and that "booming" will not be quite so much in evidence in the future. At any rate, here's my hand as a pledge that this scribbler for one will do all in his power to help along saner methods for the future.

Crop Prospects Unfavorable

Prospects are not good for a crop in many sections of Ontario this year, owing to the drouth of 1913 killing nearly all of the freshly-seeded alsike. Unfortunately our own locality is among the stricken places, so we are anticipating having little to do this coming summer, with a correspondingly light pocket book in the fall. Oh, well! there is a lot of honey still left in Ontario from last season, so perhaps it will help the business in general if some of us poor mortals, living where the clover is scarce, do not have any honey to place on the market in 1914.

California Beekeeping

Conducted by J. E. Pleasants, Orange, Calif.

Bright Prospects for This Year

The outlook for a honey crop in southern California is fair. This, however, does not mean that a big crop is assured. There are several conditions necessary to the production of a good nectar flow here, the one absolutely essential being plenty of winter rain. Following this, weather conditions must be favorable, the nights mild, light spring rains, and a slight humidity in the early part of the day.

We have had good rains, an ample rainfall for the advance of the season. The growth of the sages, especially the black, is abundant. The next two months will decide what our crop is to be, but the promise is encouraging. The last two seasons have been failures on the unirrigated forage on account of too light rainfall, as most apiaries are weak in bees. Of course you can build up rapidly in a year like this, but you increase at the expense of honey production. A wise beeman will "average up," increase to some extent and also work for a harvest.

The moving of bees from the valley regions to the mountains will soon begin by those who would rather be in for the early mountain bloom than wait for the orange flow. Moving from one section to another, though not a great distance, is practiced here by many. After the honey-flow is over in the mountains, bees are moved to the valleys to take advantage of the bean bloom. Many remain to winter, build up on willow, eucalyptus, etc., and move back to their home apiaries in the mountains to be ready for the mountain plants. Some wait for the orange flow, which, roughly speaking, runs from about the middle of March to May first. This condition keeps the inspectors pretty busy, as all bees must be inspected before moving.

American Foulbrood Under Control

We have American foulbrood under control here now. All counties that have had competent inspectors for several years have reduced American foulbrood to so low a percentage as to be easily under control.

European foulbrood is creeping into new territory, and we handle it by strengthening and re-queening — of course with good Italian stock always. I wish our scientific experimenters could help us more with this disease. It is still a question just *how* the infection is carried. Now, if we knew this with the same certainty that we do of American foulbrood, it would help us with bee-diseases, and I hope they will investigate conclusively along this line. We hope Dr. Bruennich will give his method of marking queens. It would be a help to many, especially beginners.

Buyers are coming into the market for bees here, as they have done every spring for several years. The price is becoming fairly well established at from $5.00 to $6.00 per colony for good bees in standard hives.

Big Plans for Bee-Exhibit at Panama Exposition

We Californians, north and south, are planning what we hope to be one of the best exhibits of the bee and her products ever made, at our Exposition at San Francisco next year. This is intended to show everything pertaining to an apiary, and will present the best methods of obtaining results in honey production. It is under the management of Mr. M. H. Mendelson, of Ventura county. Mr. Mendelson is well known as a successful beekeeper of large experience and great energy, so we know the results will be forthcoming. We are sincerely hoping for a good crop of high-grade honey, so that we may not only reap for ourselves, but be able to assist in furnishing material for an exhibit of which our State may be proud. It is unnecessary to say that all up-to-date beekeepers of the State are boosting for the California exhibit, and we hope all other honey-producing States will vie with us in making similar exhibits at San Francisco in 1915. It would help our national market immensely, as well as assist in furnishing beautiful and instructive entertainment to the spectators.

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Dr. Miller's Criticism

The joke certainly is on me (page 44) in thinking that I saw wood covers in Dr. Miller's cellar. The fact is, I hardly took a look at them, as my attention was taken up with the dead bees on the floor and at the door (there were only a few), and the temperature of the room. Yes, I think I know from experience that unpainted white pine hives will gape at the corners in a very few years no matter how well nailed. Our western sun will certainly pull nails and check wood. I have the dovetailed hives in mind, too. I have been told that redwood is a better wood for the West than white pine, but have had no experience with it.

I am pleased to have the description of your cover, and would like to know if the zinc just covers the top or does it extend over the sides? My opinion would be that ⅜-inch boards would be too thin for us out here, and that ⅝ would be better. Is your cover the size of the top of the hive or larger? What would be wrong with nailing ⅜-inch strips around three of the sides of the top of your cover and making a bottom-board of it? You would probably want the strips ⅞ to give a deep entrance. I have had a combination cover and bottom-board in mind for some time, and some of these days I am going to try and make one. It would be in the line of simplification of beekeeping equipment.

Overproduction and Under Distribution

There is an idea prevalent in beekeepers' minds that with advertising we can greatly increase the consumption of honey. And such is the case in very large part, but before any manufacturer or producer of an article launches upon an advertising campaign he first has his distributing agencies established and his goods ready to deliver. What Mr. Byer calls overproduction is nothing but under distribution. If every city in Canada of over 50,000 population had a specialty honey man, or some one who bottled extracted honey and kept all groceries, markets, delicatessen stores and restaurants supplied with comb and extracted honey the whole year around, the dull honey market would be unheard of for some time, I think.

Overstocking is more of a menace than so-called overproduction. I certainly think that the Canadian bee-men should bestir themselves on this matter of distributing honey. If you cannot co-operate in marketing when a large proportion of your crop is unsold, there is not much left to do but sell your honey for less. The low limit in the West on honey is about 85 cents a dozen for fancy and No. 1 comb honey. When it gets down to that figure, the bee-men get together. It is necessity that drives the majority of bee-men to co-operation, and good common sense that leads others to get together. I should think that a little foresight would bring the Ontario bee-men together before forced by the lowering price of honey.

What is there to this question of overproduction? Not very much when you take the whole country over; but it is possible when you take into consideration some States and districts. What should the average consumption of honey be in a State like Colorado? What could it be made to consume by advertising? Colorado's honey production for 1913 was 5 pounds for every man, woman and child in the State. That is 25 pounds for every family, counting the family at five members. How much of this production can we get consumed at home without shipping beyond the borders of our State? I do not think that we get more than 5 pounds per family consumed at home. Then we have 20 pounds per family that has to be shipped out. Do you think it a possibility to get a State with 800,000 people to eat 4,000,000 pounds of honey in one year? I do not. And you may use all the advertising schemes you want, I do not think the thing can be "did."

In Boulder, all the grocers have comb and extracted honey displayed and on sale throughout the year, and they advertise it in the papers. The bee-men (five specialists who live here) all sell a good deal from their homes. It is only an estimate, but I believe between 20,000 and 30,000 pounds of comb and extracted honey is sold in a year here in Boulder. We have about 12,000 population, with a pretty large mountain population depending upon us for food supplies. The consumption could doubtless be increased, but with sugar becoming so cheap, and cheap syrups so plentiful, I think there is a limit to the amount of sweet that we can get an individual to eat. It certainly will not be a very wise advertising policy to spend much money urging people to buy honey at 15 and 20 cents a pound when sugar can be had for 4 cents, and the increasing cost of living is the most talked of subject among our people today.

The proper distribution of our honey crops, and keeping our large markets supplied throughout the year will handle the situation for some time. The greatest need is an experienced honey man who will work systematically the trade in every large city. He should be a man who can be on the job the year around, and not a beekeeper who jumps into the city in the fall and winter and then does not show up again until the next fall.

NOTES FROM ABROAD

Our Visit to Lyon and Albertville

BY C. P. DADANT.

LYON (the English spell it Lyons) is the third largest city of France, at the junction of the Rhône and the Saône, the former a rushing, foaming, tempestuous stream, the latter a quiet, blue river. They are mythologically represented, in poetry and statuary, as husband and wife. The allegory is quite proper.

We were directed here to the secretary of the local bee-association and publisher of "L'Abeille du Rhône," Mr. Vibert. We found that his place of business was less than four blocks from the hotel. So we went there at once. At first sight, it seemed we had the wrong address, for the block was occupied by large wholesale houses. But in Europe, especially in large cities, you can find active business at the third story of an inner court, and that is where we found him. We had no previous knowledge of this man. But he knew us well through our past writings, and at once talked to me of familiar subjects. He was full of fun and puns.

With him we visited other friends,

Lyon Experimental Apiary at the Agricultural College—Mr. Vibert at the Extreme Right.

and called upon a former inhabitant of the United States, Mr. Gallet, who is carrying on a business in Lyon, and whom we had met before. He was courteous enough to put himself and his automobile at our disposal. We went out the next day to the Agricultural School of Ecully, near Lyon, where Mr. Vibert has classes in bee-culture regularly during the summer. The apiary is small, as will be seen from the picture. But all sorts of hives are kept. Mr. Vibert is the gentleman on the right. Much good is certainly secured from these courses in bee-culture. We are glad to find that they are also becoming numerous in American colleges.

A little later we visited a large apiary, some 10 miles away, about 90 colonies of Carniolans, Italians and common bees, mixed. The owner, an old gentleman over 71 years old, insisted on treating us to a honey preparation of his own make, a sort of metheglin. But it was fermenting so strongly that when the cork was liberated it went like a gun shot, and the bottle emptied itself before anything could be done with the contents. Foaming champagne was nothing in comparison. A second bottle gave the same result, and much to his regret he finally had to treat us on clear water, for we would not accept of wine.

Mr. Mont-Jovet.

I saw there how easily people deceive themselves when trying to make rules of accidental experiences. He had a good crop of honey, but not a single colony with more than one super. Upon enquiry, I found that he had only once tried to put a second super under the first. The bees had carried the honey down, probably because the crop was at an end. But he had concluded from his one experience that it would never do to use more than one super on a hive at a time. How many of us, who laugh at this queer idea, will make the same mistake of establishing a rule on a single exception?

Another peculiar thing I noticed here. His honey-house had no window in it. So he has to leave the door open when extracting honey or manipulating his implements. But though we laugh at these extraordinary conditions, we remember that this is a country of long established stone buildings, that they do not build anything temporarily, and that they, for that reason, hesitate a great deal before making any changes to existing conditions. The wonder should be that they progress as much as they do.

This old gentleman was cured of rheumatism by bee stings in 1871, or 42 years ago. He was not then acquainted with bee-culture, and was induced to practice it because of this trouble. He asserted to me that he was now better able to work than he was at 30. However, he is not entirely free of the disease, and perhaps the active outdoor life has had as much to do with his improvement as the effect of the bee poison.

He was very proud of his Carniolan bees, and said that they were even more peaceable than the Italians.

From numerous chestnut trees in the vicinity the bees harvest honey, which, I was informed, is of very bad quality. White melilot, locust and sainfoin are the main honey producers.

The next day, before leaving the city, we found time to visit the Chamber of Commerce and the Museum of Tissues, where we saw silk tissues dating back several centuries, and costumes of the time of Louis XIV. We finally left our kind guides to continue our way. We were given a pressing invitation to come back upon our return from Italy. Mr. Vibert assured us that if we promised to stop there again, he would arrange a banquet with 75 beekeepers of that region. But it was out of the question.

On the way to Albertville, Savoy, we had an unexpected and interesting instance of the popularity of the American methods of bee-culture in the country at large. At Chambéry we had to change train. Two country ladies, loaded with bundles, came into our compartment, and I had occasion to help them in. We had a chat with them, and when they found out that we were from America and interested in bee-culture, one of them said: "My father kept bees by the American methods and used the Dadant hive." I took a visiting card out of my pocket and handed it to her. Great was her astonishment to find that I was the man whose name she had just spoken. Yet, we have never, so far, sold a bee-hive in Europe. All the influence upon European bee-culture has been secured through the publishing of the translations of the Revised Langstroth book. Only two or three are pushing the sale of American goods on the Continent. The French edition of Root's "A B C" is now helping the work begun by the Revised Langstroth.

In the September number, we have already spoken of our visit to Albertville. I wish to insist on the advisability, for our beekeepers, to push the sale of honey in a manner similar to that followed by Mr. Mont-Jovet, furnishing it to hotels put up in individual packages of a tenth of a pound. The paper packages containing it are almost identical with those used by Mr. Pouder, described on page 10 of our January number. Granulated extracted honey is almost always the kind supplied. It may be found in almost every hotel of Savoy or of Switzerland. At the prices mentioned to us of $2.50 per hundred packages, it proves convenient to the hotel keeper and sufficiently profitable to the beekeeper, since it serves as a very efficient advertising medium for his product.

Mont-Jovet is a practical man, a dealer, as well as a large producer. In queen-breeding he has tried the isolation plan, so much praised by German-Swiss apiarists, as we will see later. He has proven to conclusion that queens and drones often mate at 4 kilometers, 2½ miles. He has known them to mate at 6 kilometers. This tallies with our own experience at home. Of course, in a mountainous country, the result may be quite dissimilar from

Mr. and Mrs. Mont-Jovet Looking for a Queen.

that obtained in plains like those of Illinois. But since the bees may not enjoy or practice scaling very steep hills, they would probably travel farther up and down the valley. In the case of worker-bees, much depends upon how near the field of blossoms is and whether sufficient in extent. But in the cases of queens and drones there is no such limitation and they fly quite far.

We have already mentioned one cut accompanying this article. The others are: A portrait of our host taken several years ago, then a view of one of his apiaries, among the grapevines, where he and his charming better-half are busy hunting for a queen. Notice the cement pillars, shaped like troughs and supplied with water to keep away the ants. The frame work that supports the hives is of iron and rests upon those troughs. I have never seen anything so carefully arranged. The caps are hinged upon the hive front and rest upon the portico when the hive is opened.

The hive shown in the next cut is what he calls the "Savoyarde." It is made of inch lumber, lined on the outside with a woven wire straw mat or cushion. Such hives have the advantage of straw hives without their disadvantages. They are not very pretty, yet they have a medieval look which pleases many persons. The frames seen in the picture are used for making nuclei, four nucleus frames to each full brood frame. They are simple square frames which are provided with artificial, removable tin shoulders for support in the nucleus.

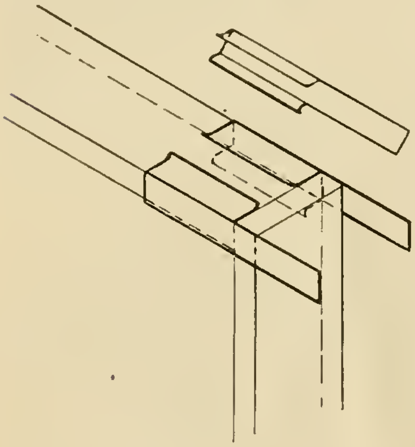


Diagram of Removable Shoulders for Frames as Used by Mr. Mont-Jovet in His Nuclei.

I do not know whether it is of any use to urge our beekeepers to try the straw protection for hives. We have ourselves used a straw mat in the Dadant hive for 40 years. We find that the placing of this non-conductor over the brood-chamber keeps the hive cool in the summer, warm in the winter. I believe that there would be a great advantage in using an outer coat of straw on our hives, as this able apiarist does.

On the second day of our stay at Albertville, we went, with our host and his wife, into the mountains and traveled some 36 miles. It was on this trip that we saw the potato vines 51 inches tall which were so badly beaten by the giants of Idaho, shown on page 359 of our November Journal. We saw big old fruit trees, hundreds of years old, especially pear trees; fine castles, old towers, and electric power plants run by the cascading streams, and furnishing cheap light to all the neighborhood. We also saw a small hive-and-section factory. But this could not compare with the big plants of our country.

The following day, Aug. 3, we took the train for Geneva, passing by the delightfully pretty Lake of Annecy. We arrived in Geneva by noon.

CONTRIBUTED ARTICLES~

Popular Fallacies

BY J. F. ARCHDEKIN.

IT IS ASTONISHING how little the average person knows about bees. I have been amused repeatedly by the queer ideas most people have on the subject. Cases have come to my notice that even border on superstition. Let me hasten to add that I don't claim any special knowledge of bees. To disprove any rights I may have to put on airs, the following incident will suffice: An old fellow who has cut a few bee-trees, asserted that it had been proved that bees often fly 50 or 60 miles in search of honey. After a few more statements tending to display his superior knowledge of bee-lore, he boldly remarked that I knew nothing whatever about bees. Some jolt? Well, I guess so.

Should some of my neighbors see me in the bee-yard early in spring opening hives and inspecting the combs, they innocently ask if the bees are making much honey. I am probably feeding with not a blossom in sight.

Many people are bee-owners who are not beekeepers. Their ignorance is of the densest, considering their chance to learn. Should you mention subscribing to a bee-journal or getting some bee-books, they invariably put up some excuse to dodge it.

A man who is an up-to-date dairyman says he can understand how honey is produced, but is unable to comprehend why I rear so many queens. He realizes that each hive has one queen, but the idea of keeping several dozen queens in one hive is past him. It doesn't make any difference if they are in cages.

A very estimable neighbor of mine kept his bees in big box-hives made of 2-inch white pine lumber. These are the largest hives I ever saw. There is as much room in one of them as in three 8-frame hives, probably more. About all his bees ever did was to swarm. Twenty-five pounds of chunk honey each is the extent of his crop. A few of these same colonies, when transferred to modern hives, made a fine crop of section honey.

Another neighbor uses frames, but says he likes salmon boxes better than regular hives, so he uses the former. He sold $45 worth of honey from about a dozen colonies last year. Therefore, he feels very much encouraged.

There is also a firmly established conviction among honey consumers that all honey is adulterated. This applies to comb as well as extracted. I had one customer who argued with me to some length that he had bought comb honey which had been manufactured. Nothing I could say would shake him, not even when I gave him the name of people who would pay him $1000 for a pound of it. About the first question the city customer asks is if the honey is pure, and he has to be assured that it is pure country honey before he will buy it.

By all means let us educate the beekeepers, the bee-owners and the honey consumers. How shall we do it? By establishing apicultural departments at the State agricultural colleges. This will give the students a chance to learn beekeeping if they desire. When the college runs an alfalfa special, and a dairy special, and a corn special, on a tour to spread knowlege of these crops, let the apicultural department send a man along to talk beekeeping at each stop. The rural schools of our State (Missouri) teach agriculture, and the scholars are required to be proficient in this branch. Couldn't a little bee instruction be included? It would be a fascinating subject for the children.

Now for the consumers. Couldn't the National Beekeepers' Association arrange a honey exhibit and send it to the pure food shows that are held each year in the principal cities? This would get at the consumers, and would undoubtedly create greater demand for honey. At the same time it would operate to set at rest the suspicion as to its purity that is cast upon honey.

St. Joseph, Mo.

[At the bottom of page 51, January number, our experienced contributor, J. L. Byer, criticizes the instruction given in colleges, by placing bee-culture upon the curriculum, and asserts that it is helping to cause overstocking. The preceding contribution, which is only a reminder of the scantiness of public information on bees, demonstrates whether it is worth while to extend the knowledge on apiculture.—Editor.]

Foulbrood—A Disease of Natural Selection

BY DR. CARTON.

IN THE STUDY of all infectious diseases, there are two factors to consider: the microbe special to each of them and the conditions of predisposition of the organisms which have given hold to the infection.

At the present day, under the influence of the great development of bacteriological science and of the services which it has rendered in surgical practice, there is too much tendency to consider, in human and animal medicine, only the microbal element, and to neglect the causes of weakness of the organic beings upon which microbe thrives.

This means that in the researches pursued regarding foulbrood, it is wrong to confine ourselves to an enquiry concerning the contagion pure and simple, and to believe that bacteriology alone may enable us to remedy the trouble, by furnishing us a specific antiseptic treatment.

To my mind, a faulty method is followed by directing the studies in this exclusive way. We should, on the contrary, make efforts to ascertain, in the direction of the bee's organism, the causes of weakness which render it liable to catch the infection.

But, in order to be still better understood, this proposition needs to be sustained with general considerations and analogical reasoning. Everything holds together in Nature, and that which is correct in general for the diseases of man is also correct for the diseases of animals.

Thus, when we examine it from the standpoint of the evolution of individuals and of races, a disease is but a work of natural selection which arrests the beings of the species on the downward slope of natural degenerescence, by compelling them to become purified, to rid themselves of the noxious substances which have accumulated in them. It compels them to momentarily cease the usage of bad conditions of existence, which would have quickly brought about their destruction, if these conditions had been permitted to remain in action. Disease, therefore, fulfills a useful role for the preservation and the progress of the race, since it attacks only the beings which are in a state of vital inferiority and causes them to disappear, to leave standing only the robust organisms capable of bringing about the progress of the race.

Compound Frames for Nuclei at the Mont-Jovet Apiary.

In fact, do we not see that, in man, the acute and chronic infectious diseases strike almost exclusively the weak or the degenerates, and that in even the worst epidemics, not everybody is affected, in spite of common contact with virulent microbes? So, when the epidemic is at last extinguished, those individuals alone remain who are the most resistant; they are the choice of the work of natural selection, as being the best and the most apt to perpetuate their kind.

We see then, that without doubt, the idea of the resistance of the beings is important to view. But what are the principal causes of the waning of the vital forces of organisms? They are of two opposite orders. There are on one side insufficiencies, that is to say lack of good air, light, motion, etc. And on the other hand we find all the vices and excesses, that is to say overfeeding or the consumption of elements which are unhealthy, toxic, adulterated, artificial, and perhaps overwork.

These two opposite, defective modes of living may lead to the same disease, the same infection. Man, for example, may cause himself to become tuberculous by lack or excess of food. There is no cause for astonishment in these identical conclusions, since the two modes of life have been equally deficient and have led to the same final result; the weakening of the force of vital resistance. The microbe gives no regard to the cause which has produced this weakness; it is sufficient for it to find the open door; that is to say the absence of organic defenses.

All the diseases, and especially the infectious diseases, so-called contagious, have a deep cause, non apparent at first sight. They depend much more upon the mode of life followed generally than upon the contamination by virulent germs.

In what concerns foulbrood, it is essential to take note of this fact, of the infection coming principally through the lack of resistance of the honey-bee, due perhaps as much to the insufficiency of food and care as to faults in the artificial feeding or the management of apiaries. It explains why foulbrood may appear as readily in abandoned apiaries as in enterprises conducted with a profusion of caution, often contrary to natural laws and therefore noxious.

That which indicates that the question of resistance is fundamental is that all the microbes are present around us in Nature, whether they exist upon us, in our natural cavities, or around us in the shape of unimportant parasites or *saprophytes*, as they are called in scientific language. It has been ascertained that we carry permanently, in our nose, mouth and intestines the bacilli of diphtheria, of tuberculosis, of typhoid fever, for instance, and that in spite of this, we are not attacked by these various diseases. But let our forces of resistance weaken some day, one of these microbes may begin to multiply in predominancy over the others, become aggressive and complete the ruin of the partly decrepit organism, before real infection appears. The microbe then passes from the state of latent and unimportant parasite to the state of infection; in such a case they say that from *saprophyte* it has become *pathogene*. But the infection which has become unlatched is really only the result of a primitive condition of organic decadence. The microbes live, therefore, upon the deterioration of the being, as moss and rottenness grow upon old trees already half dead.

This fact that the microbes of most of the infectious diseases exist everywhere in Nature explains how foulbrood epidemics may arise suddenly in spots where none had been noticed before. There was no need of bringing the germs from far away; they were already there from a long time, and they awakened from their sleep only because they found favorable conditions to multiply upon bee agglomerations existing in a condition of least resistance.

The diverse varieties of foulbrood are therefore not essentially different within themselves, since they only express the development of local races of bacilli. Thus foulbrood, in spite of the bacteriological dissimilarity of races, is essentially a unit. And this unity is due to its being derived from a similar initial weakness of the vital forces of colonies of bees.

Must we set aside entirely the remedies which are solely anti-contagious and antiseptic, to preserve our bees from foulbrood? I think so and this is why. An example taken from human medicine will demonstrate it clearly. Thanks to bacteriological science and to anti-microbal preservation measures taken the past 30 years, they have succeeded in restraining the seats of great epidemics: cholera, typhus, plague, dysentery, etc. They have also considerably diminished the number of cases of mild infections: measles, scarlatina, diphtheria, etc. But when we consider the matter closely and figure it up, what have we gained? We have prevented Nature from accomplishing her work of selection, which suppresses degenerate individuals through acute diseases.

But this law of natural selection is an ineluctable necessity; we cannot in any way avoid it. Unable to express itself by the method of acute diseases, it accomplishes its work under another shape, that of chronic diseases and infections. And, in fact, since mankind has preserved itself from acute infections, it has become the prey of degenerescence, insanity and chronic infections: tuberculosis and cancer, which, at present, decimate the civilized centers and increase in a very alarming and accelerated way.

We have thus gained nothing by the change and the unnatural measures that we have taken have turned against us, since they have permitted a host of debilitated beings to remain in action and impede the progress of the race by their unhealthy presence, and by the tainted offspring which they produce.

Taking again the analogy with bees, we thus see that if we should succeed in efficaciously combating foulbrood with anti-microbal measures alone, we might preserve our bees almost completely, but we would give rise to other diseases, acute or chronic, which would arise to accomplish the inevitable work of natural selection.

The question therefore demands to be taken from another angle. We must, first, seek the causes of degenerescence of the races of bees, the motives of the weakening of the vital forces of colonies; that will be the best means to secure them against destructive epidemics.

What are the principal causes of vital weakness that may be observed among bees? There may be first the lack of care and food, in the case of old abandoned apiaries. We will not discuss this; it is too well known. But for the large apiaries so well cared for, where is the danger hidden? To my mind, it comes from two preponderant causes. First, alimentation with industrial sugar, by feeding either in spring or winter. This food is anti-physiologic, I have already demonstrated it in the case of man (Les trois aliments meurtriers.—P. Carton, Maloine, Paris, 1 f, 25), and it is a very important cause of the digestive disorders which lead to the worst diseases. It is in fact a chemical product, devitalized and irritating, since it is not associated with diastase, with mineral matters and living energy, like natural sugar contained in fruits or honey. The danger of alimentation with artificial sugar is at the present day too much disregarded, as well by doctors as by beekeepers. On either side it will be well to think of it at length and palliate the danger within all possible limits. We should be less rapacious towards our bees; limit their yield; avoid weakening them by uncalled for feeding not in accordance with Nature; not take away from the bees the greatest part of their supplies, and, in case of necessity, feed with honey kept in reserve, or exceptionally with sugar half mixed with honey, to lessen its noxiousness.

Dr. Carton.

There might be much to say also against the intensive and artificial rearing of queens. This artificial selection is probably not equal to natural selection, The example of our finest races of domestic animals, selected by the hand of man, is there to prove it. Our finest bulls never have the force of resistance to tempestuous weather and to diseases that is shown by wild cattle.

To terminate, I will give one more argument in favor of this opinion that foulbrood is due more to a weakness of the organism of the bee than to a microbal contagion. It will be furnished to me by the fact that the best treatment of foulbrood, recommended up to this time, is without doubt that which has to do almost exclusively with the conditions of the colony and but little with the fight against microbes. In fact, the transferring upon frames simply supplied with foundation and placed in a clean hive body, acts first by giving resistance to the colony, because it places it in the beneficial vital excitement which characterizes natural swarms at the time of hiving. It also acts as a renovator of their organisms by the salutary fasting which it determines. When man applies this process, he does a useful work, for he imitates the natural processes of renovation, by causing an artificial revolution, which is analogous to a diet and to the commotion which would be caused by spontaneous disease.

On the other hand, this treatment has but little to do with microbes, since the transferred bees retain within themselves and upon themselves infectious germs which again become silent when the colony is again placed in needed conditions of vital renovation.

As a practical conclusion, let it be understood that we must not at any time abandon measures of supervision and cleanliness, because we are never entirely certain that the power of resistance of our bees is complete. But we must bear in mind, above all things, that the preventive treatment of foulbrood must consist principally in methods of breeding, of cultivation and of nourishment inspired by natural laws, just as curing methods must be undertaken more as a work of renovation of the colonies by transferring than as an anti-microbal fight.

Soft Sugar for Baby Nuclei

BY C. S. ENGLE.

MR. ARTHUR C. MILLER caused quite a little stir among the beekeepers when he reported that he had successfully fed damp sugar to colonies of bees that were short of stores. When I came across his article it "listened" good to me, so I decided to try it.

Here at home I always keep a few colonies for breeding queens and to build cells. I mate queens in nuclei, and have either used feeders in mating boxes, in which I fed sugar syrup or kept the boxes supplied with combs of honey. After I read Mr. Miller's article I decided that bees could thrive on damp sugar in southern Texas if they throve on it in Rhode Island. I then set about to make mating boxes with feeders in them suitable for the feeding of damp sugar.

Here is a drawing of the mating box that I made with the feeder shown on the left-hand side. This feeder holds about one cup of sugar.

The amber sugar that I found in the stores here was very dry; I thought too dry to answer the purpose. The only damp sugar that I could get was sticky, heavy and very dark. With this sugar I did my experimenting. I brought bees home from an out-yard; I shook the bees off the combs into an empty box, covered with wire-cloth, with ripe queen-cells. I placed the mating boxes, filled the feeders with the damp sugar, and at dark I put in the queen-cells and the bees. To get the bees into the boxes I poured water over them, shook them down into the bottom of the box and dipped them out with a tea-cup. By morning they had settled down in their new homes and were at work on the sugar in the feeders. I suppose the bees get water to dissolve the sugar, for they convert it into a thick syrup and store it away in the combs.

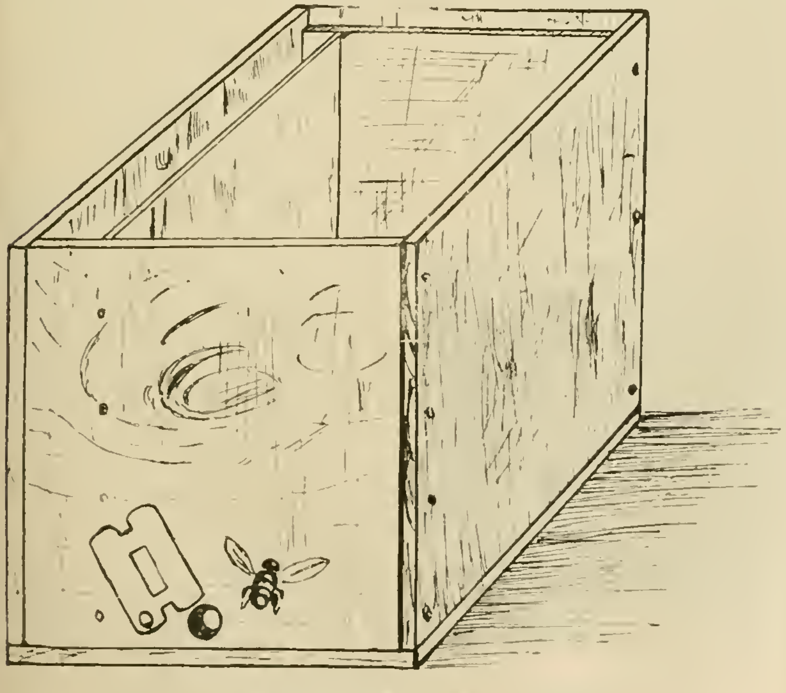
As soon as the bees needed room a frame containing a starter of foundation was given to them. They built comb as they needed room for their stores and eggs, as soon as the queens went to laying. It was surely a good sight to look into the boxes and see the bees building comb, a young queen laying her first eggs, and bees digging away in the sugar. Here is one essential point to remember, always let the bees have a little extra room, as it will keep them from absconding. A feeder full of sugar will hold the bees as long as they have a little surplus room but if they have not the room to expand, they will soon have all of the little combs filled with eggs, and they will leave.

There are several reasons why damp sugar is an ideal feed for mating nuclei; it stimulates the bees about the same as sugar syrup, but does not excite them nor cause robbing if it is given with proper care; it lasts longer than the same measure of syrup, and will not sour if not taken at once, as the syrup will do.

I have never fed damp sugar to full colonies of bees. Here the full colonies never need feed if they winter with good stores, unless a honey dearth comes in the early spring. At such a time I make a syrup by mixing equal parts, by measure, of sugar and water. I carry the syrup to the bee-yards in honey cans, and pour it into a trough that holds 30 or 40 gallons. A float made of strips of light weight wood is put in the trough for the bees to alight upon when they take up the syrup. After the trough of feed is ready for the bees I take a vessel of syrup, a coffee pot is best, and raise the cover to each hive and pour in some syrup. The bees come boiling out of the hive at the entrance to see where such a honey-flow is coming from. It is not long before they find the syrup and are soon busy carrying it into the hive and storing it into the combs.

A yard of 40 strong colonies will be able to carry in 40 gallons in two or three hours on a warm day. After the syrup has been taken up, it is best to equalize the stores by "swapping" combs of weak and strong colonies. Taking everything into consideration, I believe that this is the best way to feed bees for stores in warm weather. Of course, if your neighbor has bees near by you will also feed them.

Nearly every bee-man has to feed bees some time or other, especially the queen-breeder, and he will have to decide which of the several ways of feeding is the best under the circumstances.



Mr. Engles Mating Nucleus.

No matter how much thought is given to the best plans, when we go to put them into practice something unexpected comes up to give them a backset. For this very reason I am sure that all people will not succeed with the damp sugar plan of feeding bees. The ones that do succeed the best will be the closest observers.

Beeville, Tex.

[Bees do bring in water to dissolve sugar into syrup. For that reason sugar feeding is not profitable for brood-rearing in cool spring weather in northern countries. When you make sugar syrup, if you use two parts of sugar to one of water, it will not sour readily. The syrup that sours is that which is made too thin.—Editor.]

The Migratory System vs. the Convertible Hive System

BY J. E. HAND.

IN AN ARTICLE on page 58, I mentioned some of the distinguishing features of the "convertible hive," and in this article will endeavor to demonstrate some of the advantages of a properly proportioned hive when operated in conjunction with a well organized system. The term "system" as applied to bee-keeping methods implies a multitude of conditions intelligently formulated into a method that meets the exigencies of the situation, and brings order out of chaos by numerous auxiliary details, all tending toward the one object "system." Depending largely upon a well conducted system for success, some apiarists ship their bees to Florida in winter at an enormous expense and no small risk, hoping to treble the number of colonies and return them in time for the harvest. If the hope of a winter harvest is the desideratum in the migratory system, it seems like staking a small fortune on an uncertainty, for locations are few where the future harvest can be forecasted with absolute certainty. If the climate is the coveted goal, and feeding is an important part of the program, it is money and time worse than wasted; for no climate and environment is better adapted for winter increase by feeding than in Ohio, and no season is so auspicious of success as right at the close of the harvest from basswood when the hives are overflowing with bees and brood.

With a properly proportioned hive operated in conjunction with a system for which it is especially designed, there is little excuse for incurring the expense and risk of an expedition to southern climes, to treble the number of colonies between two honey seasons, for it can be accomplished at a trifling expense, and no risk, right at home. Acting on the advice to "plant your guns and stand by them," I have formulated a system operating in conjunction with the "convertible hive," that solves the problem of the economical increase of colonies between two harvests and shatters the universal theory that increase is secured at the expense of the honey crop. Here is the system.

THE CONVERTIBLE HIVE SYSTEM.

Assuming that colonies are in convertible hives of 16 frame capacity as described in a former article, as the breeding season opens proceed to develop the fertility of the queens by giving empty combs one at a time as often as needed, placing them next to the brood without spreading the brood combs or disarranging them.

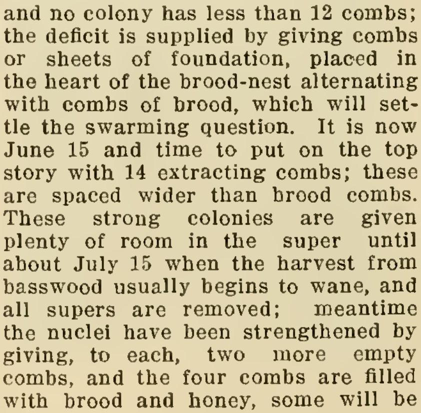
J. E. Hand's Convertible Hive.

Make the brood nest snug and warm with a close fitting follower, and a warm quilt, see that they have an abundance of stores, and nature will do the rest. The hives face east with the main entrance in the center of the front side, and a small entrance in the south end, to be opened and closed as required. Both entrances are opened and contracted accordingly, to get the bees accustomed to using the end one for queen rearing operations.

The hives will be pretty well filled with brood and bees by June 1st; there will usually be a few light ones, however, and these are utilized for making nuclei, for every colony must contribute to the production of either honey or increase. Increase demands queens as well as nuclei, and herein lies the advantage of a hive of sufficient capacity to meet the exigencies of the situation. About June 1st, the bees will be gathering sufficient nectar to admit of queen rearing, and will be using the end entrance freely. Place five combs of brood and honey well covered with bees, next to the south end of the hive, including the queen, and close them in with a close fitting follower, covering them with a cloth, thoroughly separating them from the colony. Bees having the habit of using the end entrance will continue it and breeding will continue while the parent colony is engaged in queen cell building.

Prepare a sufficient number of cell building colonies to furnish all the queens needed and enough more to make up for losses, for by this method queens cost nothing except a little time. 24 hours later, place in the center of the brood-chamber proper a frame having a cell bar with 4 grafted queen-cell cups attached, placing them in the heart of the brood nest. As soon as the cells are capped, exchange the cell bar frame for the central frame of the nucleus including the queen. On the 9th day after grafting, as many mating nuclei are formed as desired to increase to full colonies and some to spare for emergencies. These are formed by subdividing the 4 frame nuclei mentioned, utilizing colonies not strong enough for honey storing, making up the required number by utilizing combs, of brood covered with bees from full colonies not exceeding 4 combs from a colony. All nuclei including the subdivided ones are placed in separate hives, two combs in each hive, each given a ripe queen cell, closed in with a close fitting follower, covered with a cloth, and the entrance closed for 24 hours, releasing them just before dark through an exit large enough for one bee, enlarging it in two days.

We now have twice as many nuclei with queens as we have colonies, and no colony has less than 12 combs; the deficit is supplied by giving combs or sheets of foundation, placed in the heart of the brood-nest alternating with combs of brood, which will settle the swarming question. It is now June 15 and time to put on the top story with 14 extracting combs; these are spaced wider than brood combs. These strong colonies are given plenty of room in the super until about July 15 when the harvest from basswood usually begins to wane, and all supers are removed; meantime the nuclei have been strengthened by giving, to each, two more empty combs, and the four combs are filled with brood and honey, some will be queenless, and will be united with those having queens. Cage the queens in all the nuclei leaving the cages between the combs with the candy-hole exposed, and make up the full quota of 8 wintering combs for each nucleus by taking combs of brood covered with bees from the parent colonies, taking 8 combs from each colony.



View of the Convertible Hive Arranged for Winter Use.

It is now July 20 and if the flowers yield nectar we will have secured a fine crop of surplus honey, trebled the number of colonies, and every colony has its full quota of 8 wintering combs well stocked with brood; the parent colonies will be the stronger in bees on account of old bees returning home, and should have less brood. In case of a late harvest from buckwheat or fall flowers, these will be self supporting, otherwise they will have to be fed for winter. Sept. 15 take an inventory of stock and see to it that every colony is immediately provided with an abundance of winter stores, and snugly packed for winter by the "convertible hive method" outlined in a former article.

It will be noticed that while those who favor the migratory system are waiting for cold weather to enable them to carry out their project at an enormous expense, and no small risk, hoping to treble the number of colonies and return them in time for the harvest, we have trebled our number at home at a trifle of the expense, and no risk, and have them snugly tucked up in their winter nest fully a month before the "migrators" start on their expedition to Southern climes; and it is safe to assume that our bees will be in better condition for the next harvest than theirs will. They are welcome to the winter harvest in Florida, for what it costs to secure it.

Increase of stock is no small part of the profit with this system especially since it costs so little and every hive is a perfect and complete wintering repository without extra equipment. As a rule, however, we favor only 100% increase in connection with a crop of honey for the following reason: It will be noticed that the convertible hive has 16 frames in summer, and 8 in winter, and less labor will place the 8 extra combs covered with bees into an empty hive, than to brush off the bees and store the combs.

If the increase is not wanted it may be sold in the spring, or two colonies placed in one hive, separated by a division-board into two distinct colonies, and the extra hives utilized for the current season's increase; one of the queens and two combs of brood are removed for this purpose at the beginning of clover harvest, and the division removed thus uniting the working force of two colonies in one set of supers during the honey-flow, to be again divided at the close of the harvest from basswood, and wintered as two separate colonies. This method ensures a strong force of workers for the early honey-flow without any attention, and the queens are not pushed for high pressure egg laying, and the extra queen is at hand for the division; whether the increase is sold, or united, the increased production will more than pay for the extra hives in one season.

For safe wintering, the 8 combs including the bees are placed in a shell made of any old ⅜ stuff 12 inches wide inside and 12 inches deep, without cover or bottom. Place the shell containing the bees and combs, in the center of the hive crossways, bridge the space between the outer and inner entrances, put on the top story, cover the combs, and pour in the chaff, working it down into the spaces with the hand, and fill the hive with packing within an inch of the top; this space is for the circulation of air under the cover which keeps the packing dry. This method provides for 2½ inches of packing on each side, 2 inches at each end, and 7 inches on top, with a 3 inch space under the combs, a very desirable feature not found in any other wintering hive. If one of these colonies is examined from below in the forepart of winter, the bees will usually be found clustered en masse around the bottom edges of the combs especially if the combs are as full of stores as they should be.

Such results as these, however, and similar results along other lines, are possible, only with a hive of sufficient capacity for the development of correct principles. There are several double wall chaff packed hives listed in the different supply catalogues, at prices ranging from $3.50 to $6.00 but none of them can compete with the convertible hive for perfect winter protection. It costs less to make a hive of this pattern than an ordinary hive of equal capacity with none of these advantages. The object of this system is to simplify methods, and minimize equipment, and if comb honey is produced it should be in double tier frames holding 8 sections preferably alternated with clean white extracting combs, for locations are few where exclusive section honey production is advisable.

Birmingham, Ohio.

No. 2.—Doubling the Yield of Surplus Honey

BY G. C. GREINER.

WITH the exception of the 4-day experience described in my former article, no steps were taken to apply the established principle to practical use that year. The season being well advanced and no definite plans for any change of management having been formulated, I finished the season of producing extracted honey in the usual way. But my mind was troubled. With the chance of great possibilities constantly looming up before my vision, I occupied my mental faculties the rest of the season and a good share of the following winter in studying up and laying plans for next season's operations.

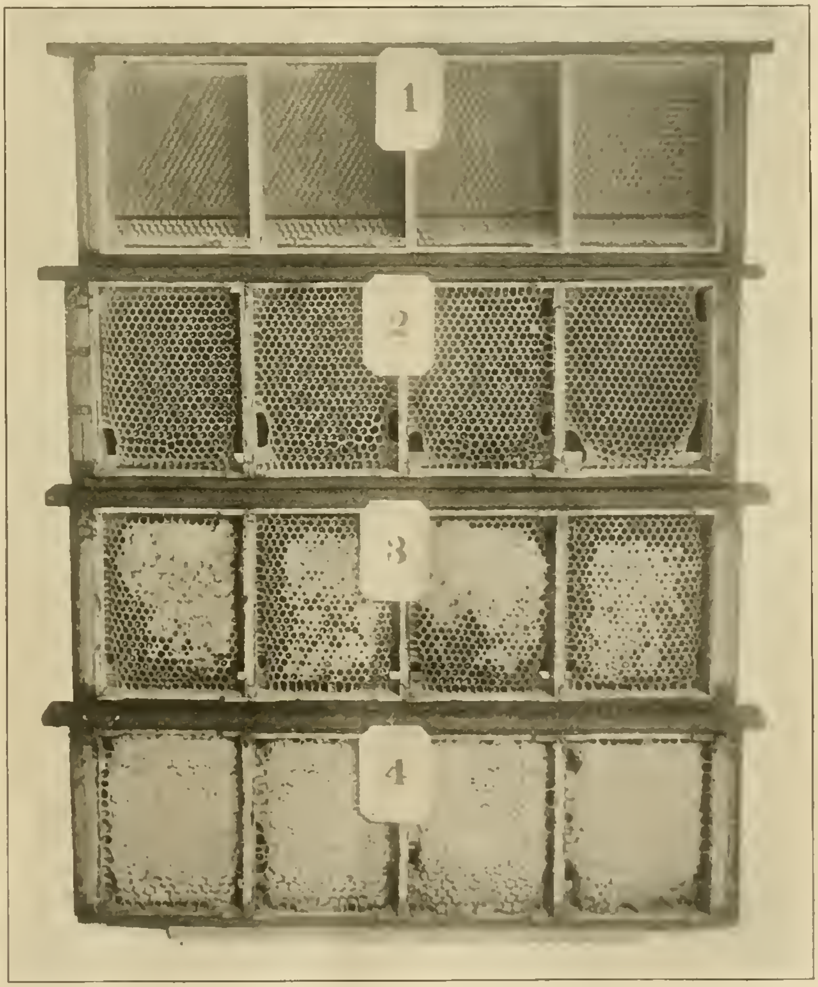
When spring opened and the time for actual work in the apiary arrived, I set aside a number of colonies for experimental purposes, not only for extracted honey, but for section-honey also. As the demand for the latter had somewhat increased during the last few seasons, I felt almost as much interested in its production as in my old staple-article of extracted honey. The results of my limited experiments of that season exceeded by far all my expectations. The yields of the few comb honey producing colonies, which I had set aside for this purpose, were in comparison to my former yields so astonishing, that I decided to manage my entire apiary by that plan the next season.

But alas! This world is full of disappointments. The year of 1911 brought me that ever memorable foulbrood campaign. Intead of conducting the continuation and completion of my experiments started the year before, I shook off 46 colonies introduced about thirty Italian queens and annihiliated by fire and smoke the entire contents of those hives. Nearly all the remainder of my yard was more or less affected, but by the application of less severe treatment and the introduction of more Italian queens I managed to save them and even produced a little extracted honey.

I hardly need to tell that nearly all my energy, time and labor had to be concentrated on the extermination of the disease. In this, however, I succeeded so, that I had quite an outfit of healthy colonies the next spring upon which to try my new method. The honey I produced that summer,—the first season I applied my theories to practical use,—brought me per colony, spring count, $23.94 after deducting the expenses for sections, foundations, retail packages and queens. Not bad for a new method.

This last season my honey crop did not quite reach those figures, but it averaged over $20.00 per colony. Although I took some heavier yields this year from some of my colonies than the year before, quite a number fell behind on account of my being disappointed with my queens. About 50% of them arrived two weeks later than I had ordered them and had planned to use them. This delay in receiving queens caused the same delay in breeding-up, which brought the working forces into service two weeks too late for our short clover flow.

My new method, which the two last seasons have proved a decided success, is based on the following principles: First, the more we allow and compel our bees to ripen and cap their honey during a honey-flow, the less will be their yield in numbers of



Sections in the Four Stages—Photographed by G. C. Greiner.

pounds or, vice versa, the less capping, the heavier the yield. However, capping cannot be entirely prevented, but the more we can restrict it the greater the gain. The same principle applies alike to extracted and comb honey.

To explain the philosophy of the foregoing assertion I refer the reader to the accompanying photograph. It represents four broad frames, generally called section-holders, filled with four sections each and each of the latter supplied with full sheets of extra thin super foundation and bottom starters, in the different stages of development. They were taken from the supers during and after the buckwheat flow, selected with a view of the desired stages of progress, but otherwise taken as they averaged. So far, there is nothing new in the picture, the same conditions can be found in almost any apiary where comb honey is produced, but the point the picture does not show is this: It takes bees as long to do the work from 3 to 4 as it does from 1 to 3, while the gain in the latter case is 3¼ lbs. against ¾ lb. of the former. (Although these figures are the actual weights of the four frames taken as an illustration, they would vary probably several ounces with any other similar set.) For the full super of 24 sections the difference would be 19½ against 4½ lbs.

It does not require very deep figuring to see that when bees are doing the capping from 3 to 4 they are simply wasting precious time of the honey flow. To make the most of the season, bees must not be allowed to do more capping during the honey flow than shown at 3. Less would be more profitable. The stage half-way between 2 and 3, when the combs are fully drawn out and filled, ready for the capping, should be our aim. When this point is reached, it is a simple matter to get unfinished sections like number 3 finished between and after the honey flows. Bees have nothing else to do during these periods, and to keep them from "loafing," likely enough study up mischief in the way of swarming, they can be kept busy finishing the work they have begun. Such a term as "unfinished sections," against which our experienced comb honey producers always caution the beginner, need not be found in the vocabulary of the bee keeper. Every section can be finished, all we need is a good bee feeder and the necessary feeding material to feed. The bottom row, 4, was finished by feeding after the buckwheat flow had ceased.

It will be noticed that those four sections are not fully bound with capped honey. I prefer them that way for the same reasons that Mr. G. M. Doolittle so ably described in a recent article. I therefore need not say anything on this point. If full-bound sections are desired, a little more time on the hives will accomplish the object.

The question, where and how to secure the required feeding material brings us to the second principle of my method, namely: No apiary can be run for extracted or comb honey exclusively if best results are desired. The two must go hand in hand, one must assist the other. This is as essential, if doubling the yield is our aim, as it is for the dairy man to keep horses. He must have teams to run his dairy farm, just so with the production of honey. If we are comb honey specialists we need a small percentage of our colonies say from 5 to 10%, according to circumstances, to produce the necessary feeding material, and if extracted honey is our main force, a like number of colonies must be set aside to transform the unripe extracted honey, which will accumulate by my method, into comb honey. This seems at present the most advantageous use for this product.

The third principle, which my observations have brought out, is this: When the production of extracted honey is our choice, we must see to it that all colonies have empty combs in at least one super at all times during a honey flow. I firmly believe, that a prime, merchantable quality of this article can be produced only by being ripened and capped on the hive, even if it is done at the expense of a heavier yield. A few empty combs when bees are capping will partially make up this loss. It gives them a continual chance for storing. I am inclined to believe, that a much greater quantity of extracted honey can be taken from a colony by the same method as outlined for the production of comb honey than by the usual management. Instead of over 500 lbs., which my best colony, spring count, has produced this last season, 1000 lbs. may be reached. This is one of the points I intend to settle the coming season.

The fourth principle, and probably the one that brings me in antagonism with many beekeeping friends is the most essential. No bee yard, whether home or out-yard, can be left two, three or more weeks at a time to shift for itself and yield a paying crop. The bee keeper must be with his bees at least once every three or four days, oftener is better. My method, which may be termed "intense management," makes this obligatory. It may seem like spending a great deal of time with our bees and therefore objectionable. When I explained my management to a beekeeping friend he said: "I consider so much 'fussing' with bees unnecessary." Well, it is unnecessary if we are satisfied with the usual 40 or 50 lbs. But if we wish to double and treble our yield, we have to put forth the effort; the let-alone-plan will not do it. At the same time, this same beekeeper will spend precious time travelling the highway back and forth, day after day, carting bees, hives and material of all kinds from one place to another, all hard, unpleasant work, that does not increase the yield of his bees one single ounce, while a little better management of fewer bees would greatly increase his returns.

Another beekeeper says: "With the performing of certain operations the work of that ward is done for fifteen days'.' A great mistake! That beekeeper does not get one-half the revenue from his yard, that a little closer attention would secure.

In the foregoing I have simply outlined the skeleton of my method. A detailed rehearsal of management would occupy too much space for this article. It will be given later.

La Salle, N. Y.

An Unknown Power

BY A. F. BONNEY.

IN A RECENT number of the "Outlook," ex-President Roosevelt gives an account of his visit to the Hopi Indians in Tusayan, and includes a description of the Snake Dance, in which he makes some remarkable guesses. First, that the venom of the Crotalus of Arizona is not as deadly as that of the rattlers of the South, that the Indians dope the snakes, or have a power over them similar to that "some men have over bees." He asserts he knew a man who had this power over rattlesnakes, and could handle them with impunity, which was an odd claim for a man of Mr. Roosevelt's mental caliber, for no man alive ever had any "power" over the cold-blooded animals other than that attained by "taming" them.

I have in my short time on earth known three of these "Snake Charmers," and all of them were bitten repeatedly, and one died. These reptiles were so stupid they did not know one person from another, and I handled some of them as freely as did the owner, but not long at a time.

As to an unknown power possessed by some men over bees, I think the statement will make all beekeepers grin. I did, while I have much respect for Mr. Roosevelt and his attainments.

I, 15 years ago, spent a good deal of time in Tusayan, the home of the Pueblo Builders, as we call them, the remnant of a civilization older, I firmly believe, than ancient Egypt, or older than the Garden of Eden. From the evidence to be found on every side I believe our great southwest was inhabited as early as was any part of Eurasia. In the lava on the mountain side are the remains of a house. This flow of melted rock was cold untold ages ago. The Cliff Dwellings were deserted when Coronado with his soldiers went north seeking the Seven Cities of Cibola, as was the Casa Granda, a communal house so old that even the present inhabitants of the country have no tradition of its builders. I have seen the Snake Dance twice, and both times saw Indians struck by rattlers, and the men did not quit the dance, yet, believe me if you can, an hour later there was hardly a mark to show where the fangs went into the flesh.

A reason for it? There must be a cause for all things. Having never seen the Indians catching the snakes, while I do know the reptiles, I am inclined to the opinion that the snakes are tired out by teasing, their poison sacs utterly exhausted, so that when they do make the rare blow there is little or no venom back of it. The venom of the Crotalus family is so deadly that there is no such a thing as making a man immune, as I believe he can be rendered immune to the poison of the bee.

Buck Grove, Iowa.

[In the article which friend Bonney criticizes, ex-President Roosevelt says exactly: "I believe that one element in the matter is that the snake priests either naturally possess or develop the same calm power over these serpents that certain men have over bees; the latter power, the existence of which is so well known, has never received the attention and study it deserves."

That many men can handle bees with almost certain impunity is a fact. I never belonged to that class. I have been in the apiary with men who would stand their ground when I was compelled to withdraw. I have seen men open hives of cross bees and the neighbors 4 or 5 rods away would have to retreat, while the operator himself did the manipulating to the end. That he was stung occasionally I know, but that he could do many things with bees which I could not do with impunity is also true. A man may be trained, or as Roosevelt says, "develop calm power over bees," yet there is something in some men which makes them succeed better in this than others.

An old gentleman in our vicinity, Uncle John Wright, long ago deceased, used to amuse the young people by inviting dozens of them to his home in long winter evenings and practicing "magnetism," or what the French call "suggestion" upon them. I did not believe in this queer power until he told me that he was sure I could do the same thing myself. I tried and succeeded. I have since found that it is "hypnotism," that hypnotism is a branch of psychology. There is not so much in it as some people would have us believe. Very certainly there is not so much in hypnotic power over bees, as some persons imagine, However this same Uncle John Wright told me that it was practical to hypnotize the bees, that if after opening a hive, without smoke, but carefully, I should boldly lay hands over them, as they appeared at the top of the combs, I would see them retreat and finally become submissive. I tried it but failed ignominiously. But an apiarist who was at the time working for me in the apiary, and who was noted for his *remarkably slow ways*, tried it after I did and succeeded.

We gave notice of it in paragraph 385 of our latest edition of the Langstroth-Dadant book. I have since occasionally succeeded in causing the bees to retreat before a "laying of hands," but I would not urge any one to depend upon it. Bees once aroused become very vindictive. I believe that the beekeeper in such cases should do what the Indians are reported to do, by Mr. Roosevelt, in this remarkable article, try to soothe them as the Indians try to soothe the snakes. But the procedure is very different in the one case from what it must be in the other.

I have seen it stated, years ago, that the poison of the bee, if it existed in as large quantities as the poison of the rattle-snake, would be more deadly than the latter. I do not remember the authority, but it was stated that the poison of the snake could be taken with impunity within the digestive organs while that of the bee could not. This is a matter for doctors and scientists to pass upon. But if inoculation has achieved such prodigies, in the prevention of small-pox, or chicken cholera, of hydrophobia, etc., why could it not have effect in the case of rattle-snakes? We know positively that we become almost immune to the bee-poison. I, myself, cease swelling after a few days of beekeeping.—Editor.]

Beekeepers I Have Known—"Edward G. Brown"

BY FRANK C. PELLETT.

Ed Brown came into intimate contact with the bees early in life; for when he was 2 years of age he went out and sat on a hive and began drumming with his heels. A short time later he was picked up by a kindly disposed neighbor woman who took him to the house, picked out the barbs and rubbed him down to something near his normal size. The mischief was done, however, for the formic acid was in his blood, and he was started on his life work.

The senior Brown was a pioneer beekeeper, and one of the first to take up the business on an extensive scale in this section. When Ed's mother came home as a bride she found a few colonies of bees in box-hives. When toward winter, her husband following the custom of the time, brimstoned the heaviest colonies over a pit, she protested that there must be a better way; that the surplus honey should be secured without killing the bees. Mr. Brown contended that it was as necessary to kill the bees to get the honey as to kill an animal to get the meat.

She was not satisfied, and soon after was attracted by an advertisement of a little journal devoted to bees. That same winter she became a disciple of A. I. Root, and purchased a few simplicity hives. The following season the Browns secured a phenomenal honey crop and increased their colonies proportionately. At this time the family were engaged in the dairy business near the present home of the younger Brown, and had considerable capital invested in a cheese factory. This was before the days of fenced pastures, and everybody's cattle ran at large. About this time the dairy business was ruined by low prices and an epidemic among the cattle of the neighborhood. The elder Brown turned his attention seriously to his bees, and from that time until his death was an extensive honey producer.

Edward G. Brown.

At the age of 16 the subject of our sketch left high school and took immediate charge of the apiaries belonging to his father. He increased the number of colonies from about 300 to 500, and produced honey by the carloads, some seasons getting in the neighborhood or 20 or more tons. He has kept bees constantly since that time.

While still one of the youngest among them, he is one of about a half dozen of the biggest honey producers of Iowa. Aside from his business as a honey producer, he is associated with others in a large honey-marketing business in Sioux City, handling not only the product of the apiaries of the persons interested in the business, but doing a large jobbing business as well.

Mr. Brown's home and family life seem to be ideal. Besides Mrs. Brown there are the two boys growing up to be beekeepers.

Atlantic, Iowa.

The Bees' Product.—The following is from the April Gas Review: "The bees are the greatest workers in the world. In this country alone, during the past year, three hundred billion bees produced enough honey to fill a train of cars long enough to reach from New York to Buffalo."

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Best Method of Increase

As I am only 25 miles from you, please recommend the best method of *increase* and still get a crop of honey for our locality. Have your "Forty Years Among the Bees." ILLINOIS.

ANSWER.—There are so many different circumstances and conditions that it is not easy to say what one system is best. What is best one time may not be best another. In the book you mention the matter of increase is discussed as fully, at least, as in any book I know of. After a careful study of what you find there, you will be able to decide for yourself better than I could decide for you. If, however, I were obliged to confine myself to any one plan, with the idea of interfering little with the honey crop, I think it would be the nucleus plan. With that you can make much or little increase, and you need not draw from one colony enough to hinder it from doing fair work in supers. But if by "still get a crop of honey" you mean to get as much as if you got no increase, I don't believe you can make it in your location. That only happens where there is an important fall flow.

Large Hives in Winter

Some beekeepers advocate taking out the two outside frames in an 8-frame hive and putting in their place chaff-filled dummies for wintering. Now that leaves only six frames in the hive for the colony to winter on. You advocate a very much larger hive, and some go so far as to advocate a 17-frame hive. What do you do with all the large space in your hive in the winter; or, in other words, what would you do with it if you wintered your bees on the summer stands?

2. How can I manage with my 9-frame hives and give them plenty of stores for winter and spring and yet have room for two chaff dummies at the outside?

3. Would you use these dummies or would you use two frames of sealed honey in their stead? NEBRASKA.

ANSWERS.—1. We rarely reduce our hive n the winter. However, with our large hives, dummies may be put on each side of the frames leaving an ample supply.

2 and 3. With hives of the size you mention, we would put the sheltering dummies on the outside. In other words, we would leave in the hive all their frames, if filled with honey, and we would place windbreaks or packing of some kind on the cold sides, leaving the front or south side exposed. This method which has given us satisfaction may not be suitable for damp countries or for countries much farther north. Each climate requires methods adapted to it.

Bee-Escapes—Best Bees—Splints, Etc.

1. I run my bees for extracted honey. How can I free the supers of bees without having to brush every comb? I do not care to use the Porter bee-escape board if there is any other way.

2. In making a few special crosses can I not take a colony with special drones, also the nuclei with virgin queens late in the evening and put them in a dark cellar, keeping them there until all drones have stopped flying on the following day, and then bring my colony of special drones and nuclei out for a flight, repeating this several times if necessary? Will this plan work?

3. What plan do you use in rearing queens at the present?

4. What race of bees will gather the most honey regardless of faults?

5. Can I put frames with full sheets of foundation between two combs and get good worker combs that are not stretched too much at the top: I mean without wiring?

6. Is there any danger of getting too much water in the honey when uncapping knives are kept in boiling water, using first one knife and then another?

7. Do you know of any two beekeepers who think exactly the same about any one subject concerning bees?

8. Would you consider a location where bees start to swarming the last of April and continue until about the middle of July a bad location? VIRGINIA.

ANSWERS.—1. You could use some other escape, as the Miller tent-escape. It consists of a robber-cloth with a cone of wire-cloth centrally located.

2 Yes, this plan has been in use for a good many years, yet it is not very generally followed if I am not mistaken. You should feed the bees when you set them out, so as to start them to flying.

3. The same I have used for years, as given in "Fifty Years Among the Bees" and in previous numbers of this journal. The colony with the best queen is allowed to build comb, the queen laying in this virgin comb, which is then given to a queenless colony.

4. Probably none will exceed the Italians, although others may do as well, and with the right kind of care and selection hybrids may do as well as pure stock.

5. You may by using foundation splints or very heavy foundation. Even then you will not always get the best results between two drawn-out combs, for too often these combs will be bulged into the comb between them.

6. Practically no danger.

7. Yes, lots of them. But I am not sure I know any two beekeepers that think alike on *all* subjects concerning beekeeping.

8. It might be bad and it might be good.

Miscellaneous Questions

1. I have at present 8 colonies of bees, and I do no not know whether they are blacks, hybrids, or just what they are, but they seem to be rather disinclined to work and over anxious to swarm. Last year from the 4 orignal colonies I secured 11 swarms. I would like to requeen some of them with Italian queens and see if this will not make them better honey gatherers and more gentle. I did not get any surplus last year, and what little honey was stored in the supers I did not remove, as I thought they would need that to help tide them over the winter. As it has been a rather severe winter for us, I think I did right

2. About what time should the new queens be introduced?

3. Would you recommend the 3 or the 5 banded Italians?

4. Do you think any other race of bees would be more suited to this part of the country than Italians?

5. Please give me the method of fixing foundation (full sheets) in frames with wires. Also starters, say 5 or 6 inches deep. KANSAS.

ANSWERS.—1. I am wondering whether you had last year one or several good bee-books and had become familiar with their contents. If you had, you hardly would have allowed 11 swarms to issue from 4 colonies. And the difference in results might have paid for a number of books. However go a bee journal may be, it is only supplementary to the teachings of a text-book. You could easily have kept the number of swarms down to 4 in all probability. When the prime swarm issues, hive it and set it in place of the mother, setting the mother close beside the swarm. A week later set the mother 10 feet away or farther. That's all.

2. The best time was last fall. But since you didn't it is not best to wait until next fall. You can do it in fruit bloom. But it will probably be better to wait 2, 3, or more weeks longer, when the main flow is on.

3. There are 3-banders better than the majority of 5-banders. Also, there are 5-banders better than the majority of 3-banders. On the average you are likely safer with the 3-banders.

4. Very doubtful.

5 To give very full directions hardly comes in the scope of this department, but if you don't happen to find it in a book I may say briefly that if you have top-bars with kerf and wedge, it will be easy to insert the upper edge of the sheet in the kerf, and then push in the wedge *deep*. Then one of the ways of fastening the wire in the foundation is with the spur wheel, during the work in a very warm room, so the foundation will be soft. If you have no kerf in top-bar, then run melted wax along the joint between the foundation and top-bar.

I don't want to tell how to put in 5-inch starters, because I don't want to use them. No economy in it. You will have entirely too much drone comb. "You're going to put them in anyhow?" Oh, all right, then. Put them in exactly the same as full sheets.

Stimulative Feeding

1. I want to have my bees strong enough at the beginning of clover bloom (which begins here about June 5 to 10) to fill two 10-frame dovetailed bodies. My bees will have plenty of good sealed white honey. Can I gain anything by feeding sugar syrup?

2. If so, what proportion of water would you recommend to the sugar? WISCONSIN.

ANSWERS.—1. I believe good honey is better food for bees than sugar syrup. Hence, other things being equal, to get them to take sugar in place of honey would be a damage. There are places where there is such a dearth between fruit bloom and honey that brood-rearing ceases entirely, even with abundance of honey in the hive. In such a place it pays to feed enough to keep up brood-rearing. Even then, it is better to feed honey than sugar, or to scratch or uncap the combs of sealed honey. But I don't believe you have that kind of place in your part of Wisconsin. If there is abundance of honey in the hive, and if there is as much brood in the hive as the bees can cover, what can you possibly gain by feeding?

2. If the bees should run short of stores early in the season, and for lack of good honey you should be obliged to feed sugar syrup, use equal parts of sugar and water, either by weight or measure.

Foul Brood?—Probably Starvation

I have 16 colonies of bees; had 20 last spring, but on account of late frost killing the early flowers, they did not begin rearing brood until very late in the spring, and the honey flow was almost a complete failure. In August something went wrong with the brood in nearly all of my colonies; probably it was foul brood. The brood would do fine and seem to be getting along all right until just a few days before hatching when the bees would begin carrying it out. Almost all of the brood would still be alive when carried out. It could not have been American

foul brood, as there was no odor, and the cell caps did not turn dark and sink as in European foul brood, and it could not have been for want of room, as the hives were not near full of brood and honey.
WEST VIRGINIA

ANSWER.—It looks like a pretty plain case of starvation. You say there was plenty of room, the hives were "not near full of brood and honey," and my guess is that they ran out of honey altogether, and the bees dragged out of the hives the white skins of the larvæ after sucking out the juices. You say the most of the brood wou'd be alive when dragged out. There would hardly be any young workers that would show signs of life, for the bees would suck out the juices before they were old enough for that; but they would tear open the drune-cells and drag out young drones that could crawl.

Snow—Swarming—Cellar Feeding

1. Is it necessary to keep snow and ice swept away from the entrance of hive?
2. Is it a good plan to have the queens' wings clipped to prevent loss of swarms?
3. What time do bees generally swarm?
4. What can one do to stop mice from entering the hives in the winter time?
5. What time can bees be fed that are wintered in the cellar? NEW YORK.

ANSWERS.—1. As long as it remains dry and hard, a little snow at the entrance is not likely to do any harm. But if it becomes wet and soft, filling the entrance and then freezing, it may do harm, so it should be cleared away before it has a chance to freeze. Not that there is special harm from the freezing, only that it allows the entrance to remain closed.

2. Yes, excellent.

3. In your vicinity the most of the swarming is likely to occur in June.

4. A good way is to close the entrance with wire cloth having three meshes to the inch. That allows the bees free passage but bars the mice.

5. Any time rather than have them swarm; but the feeding should all be done before putting in cellar.

Uniting—Shake Swarming—Bee Trees

1. In the American Bee Journal for February, on page 02, you state in your answer to "Maine," that a safe way to unite two colonies is to place one on top of the other with paper between them. Can I do this without killing one of the queens?
2. If there is a queen in each colony, do they live together?
3. What is meant by a shake swarm?
4. My bees are coming in from the fields with their legs loaded with pollen, and there is nothing in bloom here but red elm and a few little wild flowers. Do you think they will work on red elm?
5. I have a bee tree near my house containing a large swarm of pure Italian bees that got away from me last May; the tree is of no value. How should I proceed to save the bees and when should I cut the tree?
6. When is the proper time to sow white and sweet clover seed? OKLAHOMA.

ANSWERS.—1. Yes, if you have no choice as to queens you can leave it to the bees to settle the matter.

2. No; one or other of the queens will be killed.

3. When the bees are shaken or brushed from their combs, and all the combs, or all but one of them, are taken away, that is called shaking a swarm, and the bees left in the hive are called a shaken swarm.

4. I think bees work on any of the elms. They may also be working on something else that you know nothing about. Bees can beat us humans a long way at finding nectar or pollen.

5. If the tree stands out, away from other trees, you will cut it down same as any tree, and take your chance of the combs being mashed to pieces. If other trees are near, perhaps you can fell it against one of them in such a way as to break the fall. Or, possibly you can by means of ropes attached to other trees soften the fall. Then you can saw or chop off the tree above and below where the bees are, and take the log-hive home, or you can split open the tree and cut out the combs and fasten them in the frames of a proper hive. The best time to operate was last fall as soon as the bees stopped storing. As it is too late for that now, wait for warm weather in the spring when bees fly freely.

6. When farmers in your vicinity sow red clover, alsike, or alfalfa.

REPORTS AND EXPERIENCES

Report from Tennessee

Bees are wintering nicely so far. I have 28 colonies. Last year we had a dry season and pasture was short until sourwood came in bloom. My crop of honey was light, about 40 pounds to the colony. I use 8-frame hives.
Athens, Tenn. J. W CARTER.

Hauling Bees With Entrances Open

I have about 100 colonies of bees, but as I am afraid to risk more than 20 or 25 colonies in one place for fear of overstocking the range, I have a considerable amount of hauling to do in locating out-apiaries in the spring and bringing the bees in to winter. Almost all men advocate the idea of stopping the bees' entrances so they cannot get out I have been hauling bees for 8 years, and I never stop the entrances up, and I always haul in the day time if I am not crowded with some other work.

I generally load my bees at night or after a shower of rain, in order not to lose the field bees, but in both instances I smoke the bees good before I start out on my journey, and I never have had any trouble. If I make a stop it is necessary to smoke the bees before starting again Of course you can't stop very long or your bees will come out and go to work.

I bought 6 colonies in box hives from a man who lives about 18 miles away, and when I went after them they were at work on the elm buds, so I smoked them, loaded them, and got home safely, though I had lost the top from two of the hives t don't think that I ever saw a quieter bunch of bees.
Wingate, Tex. L. L. ALLEN.

Giving Bees Water

I have received so much help from reading good articles contributed by many beekeepers that I wish to offer what I can in return.

We lose many bees by drowning while they take water from ponds and water tanks, and the drier and hotter the weather the more water the bees must have. In times of drouth they become a nuisance around the stock tanks. Most water tanks are now made of steel and with vertical sides, making a death trap for the bees by drowning. We dislike to see so many of them drown, or to have them bother our neighbors. I finally hit on the following watering device:

I took an oak barrel and sawed it in two in the center. The half barrel made my watering device. I tacked burlap sacking material all over the tub, allowing it to hang inside loosely, so when the tub was empty the burlap covering hung almost to the bottom of the tub. Just before I finished tacking on the covering, I put a sealed Mason jar inside the tub and under the burlap for a float to keep the burlap on the surface of the water.

The bees began to use water from the tub at once, and ceased to bother our stock tank. They liked this watering device so well that it was just like a swarm at all times. They took away probably 20 gallons every day during the hot dry summer. The tub was located about 100 yards from an apiary of 225 colonies. Not a bee was drowned at this tub, and they also quit bothering my neighbors' water tanks. H. C. GADBERRY.
Miami, Mo.

Trying Hand's Method

I made up a couple of hives according to Mr. Hand's latest, and put them to work in the hope that they will solve my wintering problem in this province. A local bee-man told me a few days ago that 20 years ago a Scotsman called Robertson, now long dead, worked out the same scheme for Victoria, and swore by it. I will report how it behaves with me. F. DUNDAS TODD.
Victoria, B. C., Feb. 25.

Note from British Columbia

I imagine I see some of the veteran beemen smiling at the rapid increase a begin-

SNOW-BOUND APIARY OF H. C. GADBERRY, AT MIAMI, MO.
Honey-house in the back-ground.

ner can make up here in this part of Canada, as given in my communication on page 389 of the American Bee Journal for November, 1913. Instead of "increased from one to one hundred and five in two years," it should read "increased from one to one hundred and five in two years and *two months*," which practically means three seasons.

I have gotten over the increase fever, and last season I employed a practical apiarist to run my bees for honey, as I had had practically no experience in honey producing, and thought I could learn something. I did, but I did not get as much honey as I anticipated, owing principally to weather conditions.

I have been working for a cross between the Italian and Carniolans, which, I think for this climate, are just right. I have had some beautiful golden Italians, which would come out fairly strong in the spring, but would dwindle along all spring and do practically nothing all season; on the other hand my pure Carniolans kept me busy either dividing or hiving swarms.

In crossing, I supplied about 10 Italian queens to one Carniolan, which proportion I found necessary to keep an equal division of blood. Those crosses produced comb honey last season, which was beautiful, being well filled and the cappings snow white. My assistant, an Englishman who has several medals won for comb-honey production in his home land, said some of this comb would be hard to beat anywhere. The bees are fairly gentle, and if they are in any kind of fair shape in the spring, the apiarist need have no fears of spring dwindling. D. E. McDONALD.

Rutland, B. C., Feb. 16.

Prospects Favorable in Washington

We have had a very mild winter. At no time has the ground been frozen deeper than about one inch. There has been very little sunshine during the past three months, and an anusual amount of precipitation, some of it in the form of snow, but the greater part rain. While the weather has been mild, still there have been few days with sufficient sunshine and warmth to coax the bees out, and at this date, March 2, they are in apparently fine shape, with the greater part of their winter stores untouched and ready to be transformed into countless workers for the coming harvest. Practically all bees here in the Yakima Valley are on the same stand summer and winter, and usually without added protection for the winter months. They will consume from 15 to 20 pounds more honey than the colony in a cellar in Illinois or Iowa. Our greatest winter trouble, as it appears to me, is too many summer days in the winter months, days when the bees will convert a lot of good honey into unprofitable and misdirected energy, such as scrapping with their neighbor or hanging around the grocerman's back door.

The past winter has had very few summer days, and all of the beekeepers that I have talked with report their bees in splendid shape.

While it is too early to count the chickens, yet we are encouraged when we know that the old hen is sitting on fertile eggs.

A. E. BURDICK.

Sunnyside, Wash., March 2.

Loss of 4 Out of 208 Colonies

Bees have wintered nicely here, only lost 4 out of 208 colonies wintered on the summer stands. The weather is warm, and the bees are pretty busy now. I saw some carrying in pollen yesterday, but do not know where they got it. We have had plenty of rain, so we look for a good crop again this year.

Delta, Colo. GEO. F. LESTER.

To Missouri Beekeepers

I accepted an invitation from Dr. L. Haseman, the entomologist at our Experiment Station, to come over during farmers' week to have a bee-meeting there. I found there my old friend, E. J. Baxter, of Nauvoo, Ill., whom I was pleased to meet again. The appointed meeting came off with a very good audience, and Dr. Haseman gave a splendid talk on bees and their different races, and the various kinds of appliances used; after which the writer also had a lengthy talk, and friend Baxter made a most interesting and profitable speech. The beekeepers in the audience asked questions and showed that they were interested.

Dr. Haseman has taken up bee-culture a the station, to teach the pupils who are interested. He had some ten members in his class last season, and expects perhaps to double that number this time. This work is taken up towards spring. They have a few bees at the station, for demonstration only. Our State association is interested in this work, and we want to give it all the encouragement possible, as we hope it may be of much help in time, more especially to the young generation, as they enter life's duties. We may have some great beekeepers coming from this work. We hope so.

The committee appointed to investigate the matter of incorporation for our State Beekeepers' Association are at work with their duties, and the secretary, Mr. Diemer, writes me that he hopes to succeed, but we must have more help than we now have; otherwise it would put considerable burden on a few, for it takes some expense to incorporate.

A great number of beekeepers of the State will see this. Now won't you send your membership fee right away to the writer, or, better still, to the secretary, Mr. J. F. Diemer, of Liberty, Mo.? It is only $1.00, and you owe it to yourself, as well as to the bee-industry of the State, to help the cause. Our State has a splendid record as a honey-producing State, but we do not have the membership we should have in our association. We hope to get a better appropriation to do inspection work, to eradicate foulbrood which is gaining fast in the State, as we have not had enough inspectors in the field. Then we hope to get enough appropriation to publish our reports and give much valuable knowledge and information on beekeeping. Many other States are doing this, and Missouri should not be left behind.

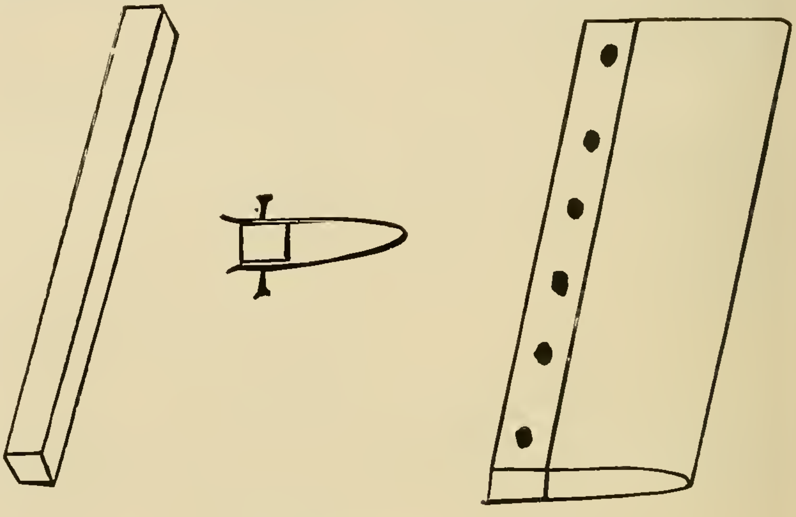
It depends largely upon you, dear reader; do not let others bear the burden and take no part in it yourself. If many do their duty it will not be a burden on any one May we not hope you will do your part.

J. W. ROUSE,
Pres. Missouri State Beekeepers' Association.

An Entrance Stopper

Here is the kind of an entrance stopper I use: Rip off a piece of pine board ½ inch thick and 14¼ inches long. Cut a piece of wire-cloth 6x14¼ inches and bend it V shape. Put a strip of wood ½x⅞x14¼ between the two edges and tack both sides. When the entrance is closed with this stopper the bees can get plenty of air.

Elizabeth, Ill. HENRY PRICE.



HENRY PRICE'S ENTRANCE CLOSER.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

QUEENS, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

PHELPS' Golden Italian Queens will please you.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York.

GOLDEN all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
2Atf Robert Inghram, Sycamore, Pa.

WANTED—To sell untested queens from my Superior Strain of Clover Italians in quantities. I. F. Miller, Brooksville, Pa.

1914 QUEENS—Moore's strain of leather-colored Italians. In April at 75c. Bees by the pound and Tested queens. Write us for prices on nuclei. Address.
Ogden Bee & Honey Co., Ogden, Utah.

ITALIAN QUEENS—Bees by lb. Descriptive List free. Apiaries under State inspection. Leaflets, "How to Introduce Queens," 15c. "How to Increase," 15c; both, 25c. 2A1t
E. E. Mott, Glenwood, Mich.

QUEENS—10 percent discount for orders received before May 1, to be filled in May and June. Tested, $1.00; untested 75c. Dead ones replaced free. 2A9t
S. Click, Rt. 2, Box 16, Mt. Jackson, Va.

PHELPS' Golden Italian Bees are hustlers.

CALIFORNIA'S Golden and 3-banded equal the best. Try them March 1. No. culls. Tested, $1.25 to $2.50. Select mated, one, 75c; 12, $8.00; 50, $32; 100, $60.
W. A. Barstow & Co., San Jose, Calif.

ITALIAN QUEENS, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or $7.25 per dozen. Safe arrival guaranteed.
W. W. Talley, Queen Breeder,
3Atf Rt. 4, Greenville, Ala.

QUEENS bred from Moore's and Doolittle's best Italian stock. Untested, 60c each; $6.60 per dozen; $50 per 100. Tested, 90c each; $10.20 per dozen; $80 per 100. Delivery guaranteed. Book orders now. Nuclei any quantity; 2-frame, $1.50; 3-frame, $2.00. Add price of above queen wanted.
Spencer Apiaries Co., Nordhoff, Calif.

ITALIAN Queens after May 1. Virgins, 25c. Mated, 50c. Please book orders 3 weeks early. John Robbins, Mesilla Park, N. Mex.

READY after April 20. Good Italian Queens, Tested, $1.00; untested, 75c. Satisfaction guaranteed. G. W. Moon,
1904 Adams St., Little Rock, Ark.

ITALIAN Bees in 10-fr. dov. hives. Moore's strain, good condition, warranted free from disease, $6.50 per colony.
N. P. Anderson, Eden Prairie, Minn.

PURE Golden Queens, the best that twelve years can produce. Untested, $1.50 each. Select tested, $3.00 each. Breeders, $5.00 to $50. Send for booklet on "Bees and Diseases." Geo. M. Steele,
30 South 40th St., Philadelphia, Penna

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

STRONG colonies of Italian bees with tested Italian queen in complete new hive, $10. Nucleus colony, $4.00. Tested Italian queen, $1.50. Write for prices on quantity.
I. J. Stringham, 105 Park Pl., New York, N. Y.
Apiaries: Glen Cove, L. I.

QUEENS ready in May. J. E. Hand strain of three-banded Italians. Bred for gentleness, honey gathering, wintering, and long life. Write for price-list and free booklet, "How to Transfer." Get honey and increase.
4Atf J. M. Gingerich, Arthur, Ill.

THE BANKSTON Bees and Queens are as good as the best. Golden, Three-band and Carniolan. Tested, $1.00 each; untested, 75c. Queens ready to ship April 15. Bees, per pound, $1.50. Nuclei, per frame, $1.50. Write us for prices on large lots of queens. Try us and be pleased.
Bankston & Lyon, Box 141, Buffalo, Tex.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

WE requeen our bees every year with best Italian stock to prevent swarming. We offer the one-year old queens removed from these hives at 50c each; $5.40 per doz.; $40 per 100. Delivery guaranteed. Book orders now. Nuclei any quantity; 2-frame, $1.50; 3-frame, $2.00. Add price of above queens wanted.
Spencer Apiaries Co., Nordhoff, Calif.

DUNN'S Golden Italian queens, bred strictly for business that produce a strong race of honey gatherers. March 1 to Oct. 15. One, mated, 75c; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60. L. J. Dunn, Queen Breeder,
2Aot Box 337 G, R. R. 6, San Jose, Calif.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10 C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

FOR SALE—Moore strain and Golden Italian queens. Untested, $1.00; 6, $5.00; 12, $9.00. Carniolan, Banat and Caucasian queens; Select Untested, $1.25; 6, $6.00; 12, $10. Tested, any kind, $1.50; 6, $8.00. Choice Breeders, $3.00 to $5.00. Circular free.
W. H. Rails, Orange, California.

CALIFORNIA ITALIAN QUEENS—3-banded and Goldens by return mail after March 15. Select untested, one, 75c; 12, $8.00. Tested, $1.00; breeder, $3.00. Bees by the pound, a specialty, ready April 1. 1 lb., $1.35; 2 lb., $2.50. Delivery and satisfaction guaranteed. Correspondence solicited. Circulars free.
J. E. Wing, 155 Schieler Ave., San Jose, Calif.

THREE-BANDED and Golden Italian queens. Ready March 1. They have been bred for three points, prolificness, gentleness and honey-gathering qualities. Prices, Select Untested, 75c each; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60. Tested, $1.50. Select Tested, $2.00.
Garden City Apiary Co.,
R. R. 3, Box 86, San Jose, Calif.

QUIRIN'S Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G. Quirin,
The Queen Breeder, Bellevue, Ohio.

FOR SALE—3-banded Italian queens, nuclei and bees by the pound. Being large honey-producers, we breed hustlers. Untested queens, each, 75c; tested, $1.25. Without queens, 1 pound of bees, $1.25; 2-frame nuclei, $2.50. Write for a complete price list.
2Atf Brown & Berry, Hayneville, Ala.

FAMOUS North Carolina Bred Italian Queens for sale (red clover 3-banders). Honey-gatherers good as the best. Strictly reared from Geo. B. Howe's best breeders; mated with Root's, Moore's, Davis' Select Drones; bees that get the honey. Free from disease. Untested, one, 75c; per doz., $7.50. Select untested, one, $1.00; per doz., $9.00. Tested, one, $1.25. Select tested, $1.50. Extra select tested, $2.00. Breeders, $3.00 and $5.00. H. B. Murray, Liberty, N. C.

THREE-BANDED Italian Queens. Before July 1st, untested, one, $1.00; 6, $5.00; 12, $9.00. Select untested, one, $1.25; 6, $6.25; 12, $11.

After July 1st, untested, one, 75c; 6, $4.00; 12, $7.00. Select untested, one, $1.00; 6, $5.00. 12, $8.50. One-frame nuclei, 75c; 2-frame, $1.50; 3-frame, $2.25. To each nucleus add price of Queen. Our Queens are reared in a locality where there has never been disease, and reared from strong vigorous colonies. The apiary is under most competent supervision. Safe arrival and satisfaction guaranteed.
Horner Queen & Bee Co., Ltd.,
Youngsville, Pa.

HONEY AND BEESWAX

"NULL'S FAMOUS MELILOTUS HONEY." Sample for stamp. Null Co., Demopolis, Ala

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—No. 1 white comb, $3.00 per case fancy, $3.25; 24 Danz. sec. to case, and 6 case; to carrier. Wiley A. Latshaw, Carlisle, Ind.

FOR SALE—400 lbs. good Buckwheat Honey in 5-lb. pails; well ripened. Will take $30 for the lot to clean up for the season.
M. C. Silsbee, R. D. 3, Cohocton, N. Y.

COMB HONEY wanted all the time; also cheese, potatoes, onions, cabbages, beans and fruits. W. W. Marmaduke,
Washington, Ind.

FOR SALE—Choice extracted honey, thick, well ripened, delicious flavor. Price, 9c per pound in new 60-lb. cans. Address,
2Atf J. P. Moore, Morgan, Ky.

DEALERS and producers who buy honey kindly ask for a late number of the Review, giving a list of members having honey for sale. Many carloads are listed in each number. Address,
The Beekeepers' Review, Northstar, Mich.

$1000 (one thousand). I will pay the above amount in cash for one pound of honey that is equal to my *Red Ripe* (Harnessed Sunbeams) Honey in digestibility, nutrient, value or flavor. Samples and prices free
C. W. Dayton, Owensmouth, Calif.

EXTRACTED HONEY—Best pure Illinois. White Clover and blends with Sweet Clover. Amber Fall and Spanish-needle grades. Also fine Western Water-white and Light Amber Alfalfa. All packed in 5, 10 and 60 lb. cans. Some in barrels. Samples and prices Free. Dadant & Sons, Hamilton, Ill.

SUPPLIES.

FOR SALE—Root's goods and Dadant's foundation at factory prices.
Spencer Apiaries Co., Nordhoff, Calif.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

BETTER HIVES FOR LESS MONEY—Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

THE A. I. ROOT COMPANY'S Canadian House. Dadant's Foundation. Poultry, Supplies, Seeds. Write for catalog.
The Chas. E. Hopper Co.,
185 Wright Ave., Toronto, Ont.

FOR SALE—New 10 frame hive bodies in flat; made of white pine, corners halved; nailed like dovetailed hives; are cheap. Write to H. F. Maeder,
Rt. 4, West Bend, Wis.

REDWOOD hive bodies, 25c each. Improved melted beeswax painted comb foundation.
J. E. Lawrence,
326 Clay St., San Francisco, Calif.

THE NATIONAL Beekeepers' Association now buy supplies for their members. Send us your order, enclosing the same money you have to pay others, and we will buy them for you on the co-operative plan. If not a member we reserve the right to retain $1.50 from the profits on your first order to pay your membership dues and subscription to the Review one year. Sample copy of the Review free. Address,
National Beekeepers' Ass'n., Northstar, Mich

FOR SALE

75 COLONIES of bees for sale. Write
Jay C. Davis, Rt. 2, Marshfield, Wis.

HAVE MORE Bees than I can handle, also extra farm for sale. W. T. Bailey, Suffolk, Va

DOUBLE the honey crop and save half the labor, 25c. Money back if not satisfied.
O. N. Baldwin, Baxter Springs, Kan.

FOR SALE—35 strong healthy colonies of bees in 10-frame hives. T. O'Donnell,
815 So. Kildare Ave., Chicago, Ill.

FOR SALE—Empty second-hand cans, two cans to the case; good as new; 25c per case.
C. H. W. Weber,
2146 Central Ave., Cincinnati, Ohio.

FOR SALE—15 colonies of bees, all in good hives, with Hoffman frames, at $5.00 per colony. John Herbert, Hampshire, Ill.

FOR SALE—50 full colonies of pure Italian bees at $6.00 each, in 8-fr. dov. hives with Hoffman frames. Moore queens of 1913 rearing. No disease. F. A. Gray,
Redwood Falls, Minn.

FOR SALE—22 1½-story Danzenbaker hives with brood frames and section holders; practically as good as new, $1.50 (½ of price list). 5 1-story, $1.00. Bees were transferred, combs and frames boiled to melt wax. No disease. Alfred Mottaz, Utica, Ill

FOR SALE—240 colonies of bees and everything for running three apiaries for extracted honey. Also 120 acres of land in a good location where raspberry, clover, basswood and fall flowers grow. Write for price.
E. S. Frost, Rt. 8, St. Louis, Mich.

Closing out sale of bees. Have 50 colonies in 8-frame hives, queen-excluding honey boards, queen and drone traps, Porter bee-escapes, Cowan honey extractor, Doolittle solar wax extractor, supers, and all that is necessary to complete a profitable apiary. If interested, write me. 4A2t
S. C. Boyle, Bode, Iowa.

MISCELLANEOUS

ORIGINAL and unique honey advertising post cards (photos). Write Dr. Bonney, Buck Grove, Iowa, for samples.

THE BEEKEEPERS' REVIEW Clubbing List. The Review and American Bee Journal one year $1.50. The Review and Gleanings one year, $1.50. All three for one year only $2.00. Dealers, or those wanting to buy honey, kindly ask for a late number of the Review having a list of 100 producers having honey for sale. Address,
The Beekeepers' Review, Northstar, Mich.

I GOT 100 pounds of comb honey per colony; my neighbors got none. I'll tell you how for 25c. O. N. Baldwin, Baxter, Kan.

WANTED

WANTED—To buy bees. Give full particulars and price. W. C. Davenport, 2201 Pioneer Road, Evanston, Ill.

WANTED—10 colonies of bees in 10-frame Langstroth hives. E. A. Schmalle, Belmond, Iowa.

SITUATIONS.

WANTED—Young man of good habits to work with bees at once. State wages, age and experince in first letter. M. C. Silsbee, R. D. 3, Cohocton, N. Y.

WANTED—Comb-honey man to help in apiaries, consisting of 1200 colonies. Year around work for right party. State salary and experience in first letter. M. A. Gill, Jr., Hagerman, Ind.

WANTED—Young man, 24, single, good character, inexperienced, wishes to learn modern beekeeping during the .coming season. Kindly send proposal.

Geo. Schwarzbach,
53 Forest St., Montclair, N. J.

POULTRY

PURE WHITE and Blue Barred Homer Pigeons. Good breeders and mated pairs. J. W. Hopson, Bedford, Iowa.

SINGLE COMB Brown Leghorns. Champions of the West. Over 300 prizes won. My quarter of a century record is free.
3A3t C. F. Lang, La Crosse, Wis.

FOR SALE—Single Comb Buff Orpington eggs for hatching, pure bloods; $1.00 per 15 or $5.00 per hundred. Satisfaction Guaranteed. W. H. Payne, Hamilton, Ill.

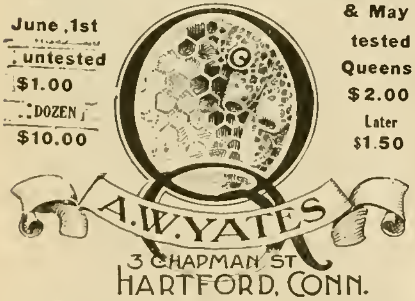
S. C. W. ORPINGTON eggs, 15 for $3.00; 30 for $5.00. Direct from Kellerstron, ancestor of "Peggy," the $10,000 hen. Indian Runner duck eggs, 10c each, white and fawn. I. F. Miller, Brooksville, Pa.

"NUTMEG" ITALIAN QUEENS

**Leather-colored, reared by up-to-date methods.
Prize winners, red-clover strain.
By return mail.**

AFTER June ,1st untested $1.00 DOZEN $10.00

April & May tested Queens $2.00 Later $1.50



3 CHAPMAN ST
HARTFORD, CONN.

Write for prices by the hundred

QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate. Purest of the pure

GREY CAUCASIANS

Bred strictly in the light of **Mendel's Laws of Heredity**; no guess, but positive results. The pioneer **scientific** queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special **isolated mating station** on bald open prairie, not a tree within miles—no chance for gypsy drones.

CHAS. W. QUINN
Box 389 - . Beaumont, Texas

HONEY AND BEESWAX

CHICAGO, March 18.—The cold weather of February helped the sale of honey, especially that of comb, so that the market is now practically cleaned up on all grades of comb honey, a situation which 60 days ago was quite unlooked for. Fancy grades are selling at from 14@15c per pound; the off grades are also finding a market with very little being offered. Prices range from 8@13c per pound. Extracted is weak, with the best white clover and basswood bringing from 8@9c per pound, with other white grades from 7@8c per pound. The demand for beeswax has been very active, and brings from 33@35c per pound, according to color and cleanliness. R. A. BURNETT & CO.

DENVER, Mar. 16.—Our local market is well supplied with honey, and our jobbing quotations are as follows; Strictly No. 1 white, per case of 24 sections, $2.70; choice, $2.57, No. 2, $2.43. Extracted, white, 8@9c; light amber, 7@7½c. We are in the market for beeswax, and pay 32c per pound in cash, and 34c in trade delivered here,

THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, *Mgr.*

KANSAS CITY, MO., Mar. 18.—The supply of comb honey is still large, demand light. Supply of extracted honey moderate, demand fair. We quote as follows; No. 1 white comb, 24 sections per case, $3.75 to $3.85; No. 2, 2.50 to $2.60. White extracted, per pound, 8@8½c; dark and amber, 7@7½c. Beeswax, per pound, 25@30c.

C. C. CLEMONS PRODUCE COMPANY.

INDIANAPOLIS, March 18.—Fancy white comb honey is being offered here at 16@17c per pound; amber comb at 14@15c. White clover extracted 9@10c in 5-gallon cans. Much comb is being held here, but at this writing there is very little demand. Extracted is in fair demand. Producers are being paid 32c cash for beeswax or 34c in trade. WALTER S. POUDER.

CINCINNATI, March 18.—The demand for honey is somewhat improved from what it was 30 days ago. The stocks are heavy, and hardly think the prices for next season will be as stiff as last season. We continue to sell our fancy comb honey in the wholesale way at $3.75 a case delivered. Our extracted table honey from 7½@10c a pound; our amber extracted honey from 5½@6½c and 7½c a pound, according to the quality and quantity purchased. For choice bright yellow beeswax we are paying 32c a pound delivered here, and 34c a pound in trade for supplies. THE FRED W. MUTH CO.

NEW YORK, March 20.—We have nothing new to report. While there is as yet some demand for fancy and No. 1 white comb honey, it does not count for much, and other grades which were shipped to us late in the season when the demand was pretty well over, are practically unsalable and we have several lots in stock which we would rather not have had sent to us at all. If it had been shipped early we could have disposed of it, but now we have it on our hands and would rather not have received it at all. Extracted honey is very quiet. There is some demand for strictly fancy white clover while other grades are neglected. Prices remain about the same as in our last quotations.

HILDRETH & SEGELKEN.

BOSTON, March 20.—Fancy and No. 1 white comb, 15@16c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c. BLAKE,-LEE COMPANY.

LOS ANGELES, March 18.—The market on honey is only nominal. We quote choice light amber in carload lots at 6c per pound. White alfalfa 6½c, and fancy southern California white honey at 8½c per pound. Beeswax, 30@31c f. o. b. Calfornia.

HAMILTON & MENDRRSON.

Untested ITALIAN QUEEN-BEES

OUR STANDARD-BRED

**6 Queens for $6.00;
3 for $3.50; 1 for $1.25**

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens purely mated, and all right in every respected. Here is what a few of those who received our Queens have to say about them.

AMERICAN BEE JOURNAL—

Gentlemen:—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters.

Riddle, Oreg., July 4, 1012. L. W. WELLS.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is $1.25, or with the old American Bee Journal for one year, both for $1.60. Three Queens (without Bee Journal) would be $3.50, or six for $6.00. Full instructions for introducing are sent with each Queen, being printed on the underside of the address card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-bred Queens.

American Bee Journal, Hamilton, Illinois.

Root's Goods in Michigan

Our Specialty—The "Root Quality" Bee Supplies to Michigan Beekeepers Prompt Service in Shipping. We sell at factory prices. Beeswax Wanted. Send for 1914 Catalog showing our Parcel Post Service.

M. H. Hunt & Son, Dept. A, Lansing, Mich.

Queens from Caraway's Prize and Winning Stock

Three-banded Italians ready to mail now! Golden Italians after April 15 Following are my prices:

	After April 15				After May 10				After June 10			
	1	6	12	100	1	6	12	100	1	5	12	100
Untested	$1.00	—	$10.00	$75.00	$ .90	$4 50	$ 9.00	$70.00	.70	$4.00	$ 7.75	—
Tested	1.25	6.00	12.00	—	1.00	5.00	10.00	—				

Select tested from April 1 to Nov. 1, $2.00 each; Breeders, $5.00 each.

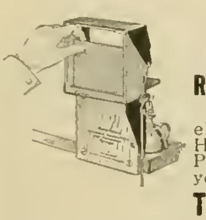
Bees by the pound after May 10th, one lb. for $2.00; 10 lbs. for $18; 100 lbs for $170. Add to these prices the price of the queen or queens. Safe arrival guaranteed within 5 days' journey of Mathis.

My three-banded Italians captured first prize again at Dallas State Fair and the Cotton Palace Fair at Waco. This speaks for itself—none better.

For my stock I secured the best stock obtainable, and when you pay more than my prices you are paying that much extra. I sell nothing only good queens. None better. I positively guarantee my queens to please. No foul brood.

References:—Mathis 1st State Bank and the American Bee Journal.

B. M. CARAWAY, Mathis, Texas



Decrease the Cost of Producing Comb Honey

By using the

Rauchfuss Combined Section Press and Foundation Fastener

Put up your sections in half of the former time. Not an untried novelty. The old style machine is used by hundreds of Western Comb Honey specialists; the new machine is better and cheaper. By Parcel Post anywhere in the United States—$3.00. Satisfaction guaranteed or your money back Write today for illustrated circular to

The Colorado Honey-Producers' Association 1440 Market St., Denver, Col.

FLAX BOARD

Flax Board is composed entirely of flax fibre, thoroughly degummed and pressed into desired thicknesses by heavy machinery. It is a blanket of unbleached linen. It is rat and vermin proof, and will not decay.

One-half inch thick Flax Board has the efficiency of thirty thicknesses of building paper. It is the best insulating material known. It will keep the inside of your hives cool in hot weather and warm in cold weather, and will not condense moisture anywhere.

We furnish it cut to any size. Prices and weights as follows:

100 square feet, ½ inch thick, weight about 70 lb.	$3.00
100 " " ¾ " " " " 140 "	4.50

ONE-HALF INCH THICK TO FIT TOP OF THE HIVE.

8 frame, weight 1¼ lbs. each	$ .10	per 100	$6.00
10 " " 1½ " "	.11	" "	7.00

THREE-FOURTHS INCH THICK TO FIT TOP OF HIVE.

8 frame, weight 2½ lbs., each	$ .14	per 100	$ 9.00
10 " " 3 " "	.15	" "	10.00

**Order a sample to be sent by Parcel Post.
Will ship as third-class freight.**

MINNESOTA BEE SUPPLY CO. 100 Nicollet Island Minneapolis, Minn.

Manufacturers of Standard Dovetailed Hives, Sections, Shipping Cases

CAUCASIANS

THE COMING BEE

Nothing lacking—excel in many ways all other races

I am the Pioneer in bringing the

TRUE GREY CAUCASIAN BEE
To the American Continent

Prices and explanatory free for a postal

Established in Michigan in 1878

A. D. D. WOOD

**Box 61, Lansing, Mich., or
Box 82, Houston Heights, Tex.**

P. S. Will sell Nuclei from my Michigan yards only.

CAUCASIANS

CAUCASIANS

CAUCASIANS

UNTESTED QUEENS, 75c each; 7.50 per dozen. Tested, $1.50. Breeders (choice), $5.00. Nuclei, $1.25 per frame; good supply of bees, ½ lb. Bees (Italians) with untested queen, $2.00. One pound with untested queen, $3.00. Full colony in 8-frame hive, with queen, $6.50. Full colony in 10-frame hive, with queen, $7.50. Inquiries from jobbers solicited. Safe arrival and satisfaction guaranteed. Excellent mail and express service. Only twelve hours ride to St. Louis, Mo. Can ship March 20; probably March 10.

Pure Buff Leghorn and Ancona eggs for hatching, $1.00 per setting.

STOVER APIARIES
Mayhew, Mississippi

Try My Bright ITALIAN QUEENS

This is what one customer writes:—

JOSEPHINE, TEX., June 16, 1913.

MR. M. BATES, Greenville, Ala.

Dear Sir:—I am sending you $0.00 for which please send me 12 Untested Golden Italian Queens. The queens you sent me are fine, and old bee rearers say they are the finest they ever saw. They have surely made a reputation here for you. Several men say they will order queens soon.

A. M. MORRISON.

I have other letters that say the same. Selected Untested, each $1.00; Tested, each $1.50; 2-frame nuclei, each $2.50. I guarantee safe arrival and perfect satisfaction.

M. BATES, Route 4, Greenville, Ala.

SAVE YOUR QUEENLESS COLONIES

We can furnish vigorous Tested Queens by **return mail** for $1.00 each. Untested Queens ready April 15. $1.00 for single queen; $9.00 per doz. Three-banded Italians only. No disease, and satisfaction guaranteed.

J. W. K. SHAW & CO.,
Loreauville, Louisiana

QUEENS OF QUALITY

3-band leather color. Sel. unt., 75c each; $8.00 per doz. Orders booked now. Circular free. **J. I. BANKS, Liberty, Tenn.**

DOOLITTLE & CLARK

Are now booking orders for Italian Breeding Queens. Prices, $2.50, $5.00, and $10.

MARIETTA, ONONDAGA CO. N. Y.

BEE - SUPPLIES Send your name for new 1914 catalog out in January. Dept. S. C. C. Clemons Bee Supply Co.,
Kansas City, Missouri.

American Bee Journal

WANTED

Honey!

Extracted and Comb

Will buy or handle on Commission

Beeswax

Will Pay Highest Pricse.

Yours very truly,

HILDRETH & SEGELKEN
265-267 Greenwich St., New York, N. Y.

3-BAND LONG-TONGUED RED-CLOVER ITALIAN QUEENS

FOR SALE.—My long-tongued Goldens are proving themselves to be the bee to clean Foul Brood. This is why I have such a large trade in Canada. Mr. E. L. Cox, of Jesup, Iowa, introduced 50 of my 3-band queens in Foul-Broody colonies in 1912; and he said the disease was cleaned up where each of those queens was put. They gathered such a large crop of honey in 1912 that he bought 50 more in 1913.

One Untested, 75c; 6, $4.00; 12, $7.50; 25, $13.50; 50, $25.00

Double the above for tested queens. Bees by the pound: One lb., $2.00; 2 lbs., $4.00. One-frame nucleus, $2.00; 2 frame, $3.00; 3-frame, $4.00. To all the above packages add the price of queen. I will begin to send out queens in April.

Positively no checks will be accepted. Send money by P. O. Money Orders. All queens arriving dead will be replaced if cage is returned by return mail.

J. B. ALEXANDER, CATO, ARK.

EXTRACTED HONEY

Just received car New Utah Alfalfa Honey, **8 1-2 cents** a pound f. o. b. Kansas City, Mo. **C. C. CLEMONS BEE-SUPP. CO.**
Department A, Kansas City, Mo.

MARCHANT'S

Three-banded Italian

Island-bred Queens

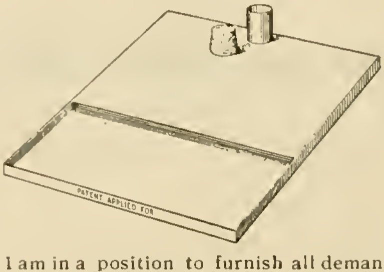
Bred from Selected Mothers

And mated to isolated drones of a different strain. My aim is quality and not quantity. So if you wish any of these choice priceless mated queens, order now or you may not get them, as I am only going to rear a limited number. Free from disease, and your money back if not satisfied. The A. I. Root Co. use my queens, which is proof of their quality. No need to write for a lower price. Reference, the American Exchange Bank of this city. Prices, Untested, $1.50; 6 for $6.00; 12 for $10 In lots of 25 or more, 75c each. Select Tested, $3.00; Breeders, $5.00 and $10.

A. B. MARCHANT
Apalachicola, - Florida

The Opfer Hive-Entrance Bee-Feeder.—Some of the many good points of the Entrance Feeder are these:

1. It is made of heavy galvanized iron and will last a life-time.
2. It reduces the hive-entrance.
3. It reaches where the bees can get at the feed even in cool weather.
4. It feeds the right amount.
5. It will not cause robbing.
6. It will not disturb the colony while feeding.
7. It permits quick work.
8. The bees will not drown in it.



I am in a position to furnish all demands for these feeders at the following prices, f. o. b. Chicago: One for 20c; 5 for 18c each; 10 for 16c each. If ordered by mail, add 10c each for packing and postage.

Address all orders to—**A. H. OPFER,**
6259 Patterson Ave., Chicago, Ill.

Dixie Swarms

Direct to You in April

Stop and think for half a minute what a small package of bees or nuclei would do if put on those unoccupied combs early in the spring. The cost is just a drop in the bucket, and your 1914 honey crop may be doubled. Bees by the pound. Queens and nuclei shipped during April. Carefully selected stock. Excellent express and mail service. **Prices low.** Save money by writing at once, for our price-list and estimate on your order.

CONNEAUT LAKE BEE COMPANY
Meldrim, Georgia

ITALIAN QUEENS

Try Murry's Strain of 3-Banded Italian Queens

Best stock obtainable at any price. 18 years' experience as a queen-breeder. Satisfaction guaranteed or money refunded. 550 nuclei, besides 11 apiaries to draw from. Write for booklet, free. Tested queens in March. Untested in April.

Prices before May 10th:

Untested, 75 cts. straight; Tested, $1.00 each, $00.00 per 100.

After May 10th:

Untested, one for 70 cts.; 5 for $4.00; 100 for $65.00. Tested, one for $1.00; 6 for $5.00; 100 for $80.00. Select Tested, $1.50. Breeders, $5.00.

Bees by the pound; One pound, $2.00; 10 pounds, $18.50; 100 pounds, $180.00.

Better let me book your orders now, for bees or queens in quantities. No disease.

H. D. MURRY, Mathis, Texas

Buy Carniolans in Carniola
Pure Carniolan Alpine Bees
Write in English for Booklet and pricelist. Awarded 60 Honors
Johann Strgar, Wittnach
P. O. Wocheiner-Feistritz
Upper - Carniola (Krain), Austria

ITALIAN BEES

Choice Home-bred Queens Reared In strong colonies.

PRICES FOR APRIL

One Tested Queen	$2.00
" Select Tested	2.65
" Breeder	4.00
" Comb Nucleus—no Queen	$1.75

Safe arrival guaranteed.

For description of each grade of queens send for FREE catalog.

J. L. STRONG,
Clarinda, - - Iowa

Three-Band Italian Queens For 1914

I will again have for sale, after April 1st, young queens reared from my best Leather-Colored Breeders. You will make sure of improving your stock and securing a crop of honey if you introduce some of these queens. The Leather-Colored Italians are recommended and used by the largest and most progressive bee-men of today.

Untested, $1.00 each; $9.00 per doz., $75 per hundred. Select Tested, $1.50 each.

C. S. ENGLE, Beeville, Bee Co., Texas

Q-U-E-E-N-S

The Old Reliable 3-Band Stock

My queens are reared from imported stock which makes a beautiful bee. They are fine honey-gatherers, and very gentle. Try my queens. Send me your order, and if not satisfied will return your money. Safe arrival guaranteed. Untested Italian, 1, 75c; 6 $4.25; 12, $8.00.

N. FOREHAND, R. F. D. 2, Brewton, Ala.

QUEENS Pure leather-colored Italians bred in isolated location; mated to drones of a heavy storing strain; cannot be beat for comb honey; cap white; enter supers readily, with little inclination to swarm.

Queens are reared under best possible conditions. Will begin mating about June 15th. Get your orders in early, as the greatest rush is always at the opening of the season. Orders promptly filled. Safe delivery and satisfaction guaranteed. Prices: One, 85c; 6 for $4.50; per doz., $8.00. No foulbrood. Send for circular.

D. G. LITTLE, HARTLEY, IOWA

ARCHDEKIN'S FINE ITALIAN QUEENS

Three-banded. Bred for persistent profitable production of honey. Prolific, hardy, gentle. The bee for pleasure or profit One customer says, "Your queen soon had her 10 frames running over with bees that are hustlers. No disease. Satisfaction guaranteed. Orders filled promptly. Ready May 20.

Untested, $1.00 each; 6 for 5.50; doz., $10.
Select tested, $2 each.

J. F. Archdekin, R. R. 7, St. Joseph, Mo.

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL — Breeding. — Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-Page Catalog

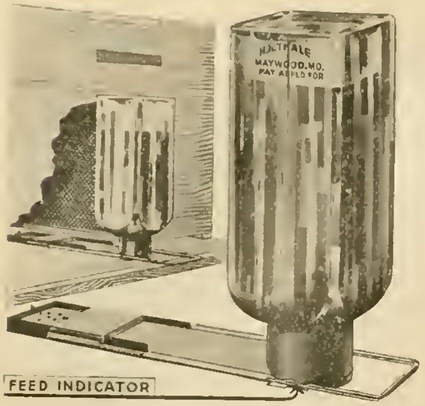
Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

C. H. W. WEBER & CO.

CINCINNATI, 2146 Central Avenue, OHIO



THALE'S REGULATIVE VACUUM BEE-FEEDER

Pleases wherever it has been given a trial. After mailing out several thousand sample feeders, we have received hundreds of orders like the one given below:

ORDWAY, COLO., Jan. 26, 1914.

H. H. THALE, Maywood, Mo.—*Dear Sir:*—I rec'd the sample bee-feeder O. K., and think I will like it fine. Ship me 250 feeders complete and 25 extra bottles. Enclosed find check in settlement for same. This is quite a bee-country, but the main drawback has been that they don't get strong quite early enough to take proper advantage of the earliest clover blossoms. Now, if you would like an agent in this part of the country, I'm sure I can make some heavy sales for you, as I am acquainted with beekeepers owning from 1000 to 15000 colonies. Please let me hear from you at once. Respectfully, D. B. HERSPERGER.

I want every beekeeper and queen-breeder in the U. S. to try this feeder this season. Send 55c for sample feeder, postpaid, today. This is one of the biggest money makers for the beekeeper. Over 42,000 are now in use. I want over 100,000 of these feeders in use by June 1. I will ship you as many bee-feeders as you need on ten days' free trial in your own apiary, and if these feeders do not work as represented you may return them to me at my expense, and your money will be refunded. If no money is sent, fill in and cut out Free Trial offer below and mail to me today. Address, Free Trial Dept., A 94.

TERMS, CASH WITH ORDER

Sample feeder, with two bottles, complete by mail postpaid	55c	All orders over ten feeders each only - -	30c
Ten feeders, complete with one bottle, by freight or exp. each	35c	Extra botles with cork valve, each - - -	10c

H. H. THALE, Inventor and Manufacturer **Box A 25, Maywood, Missouri**

Eastern buyers send orders to Earl M. Nichols, Lyonsville, Mass., and B. H. Masters, Edison, Ohio.
Western buyers send orders to D. B. Hersperger, Ordway, Colo.

TEN DAYS' FREE TRIAL ORDER

Please send by....... ....Freight, Parcel Post (send postage), Express

Post-office...................... ....R. R. Station...State.............................. .

Send at once (number of feeders)...........................feeders on ten days' free trial. Title of feeders to remain with H. H. THALE, of MAYWOOD, MO., until payment in full is made or feeders returned.

How many colonies have you ?..................Annual crop........................pounds.

Produce comb or extracted ?............ ....Sign...

Organized Co-operation

THE WESTERN HONEY BEE

A new magazine owned and run by the bee-keepers, filled with Western life as depicted by the best talent on bee topics obtainable. Special department on crop and market conditions during season.

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1 inch, $2.00 per issue
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MAKE MORE MONEY FROM BEES
Blanke's Bee-Book Free

JOHNNIE-ON-THE-SPOT

DELIVERIES

When you order Bee Goods, you want them "now"—we are in the very heart of the Bee Section—no city with so good package car service—largest stock west of the Mississippi. Whenever possible, orders shipped same day as received—more carefully packed than ordinary.

Blanke's Bee-book Free.—a catalog filled with helpful tips for either beginner or old timer. Write today before you need supplies.

Department 1
Blanke Mfg. & Supply Co.
St. Louis, Missouri

FOR SALE

Fine Three-banded Southern
QUEENS

Untested, $1 00; tested, $2.00. My best, $3.00. My bees are gentle, prolific, and fine hustlers. Give me a trial order and be convinced.

J. L. LEATH, - - - Corinth, Miss.

ALSIKE CLOVER SEED

Small and large red, alfalfa, white and yellow sweet clover seed, timothy, blue grass, rape, millet, etc. Also seed corn.
Catalog of apiary supplies and seeds free

F. A. SNELL,
Milledgeville, Illinois

SUPERIOR
GOLDEN QUEENS

Untested, $1.00; 6, $5.00; 12, $9. Select Untested, $1.25; 6, $6, 12, $10. Prices on application for tested and untested queens by the hundred. Address,

T. S. HALL, Talking Rock, Ga.

MARSHFIELD GOODS

BEE KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., **Marshfield, Wis.**

Beekeepers' Supplies and Fruit Packages

We manufacture the famous Sheboygan Hive, which always gives absolute satisfaction. Our perfect sections, made from selected white basswood, are recognized as the best on the market.
Catalog now ready for distribution. Write for copy.

SHEBOYGAN FRUIT BOX COMPANY, **Sheboygan, Wisconsin**

Dittmer's Foundation

Is the **Comb Foundation** made to **suit the Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

Ask for more information ; also prices and **FULL DISCOUNT** on all Bee-Supplies.

Gus Dittmer Company

Augusta, Wisconsin

PAGE - KENKEL MFG. CO.

Manufacturers

OF THE

"NONE BETTER"

BEE-KEEPERS' SUPPLIES

Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping - Cases. Brood-Frames, Separators, etc.
We invite your correspondence.

Guarantee—All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

Page-Kenkel Manufacturing Co.,
New London, Wis.

FOR THE BEST **Early QUEENS**

Send me your address for Italians and Carniolans. I BEGIN mailing Queens early in March. Untested, 75 cts. each. Tested, $1.25 each. Circular free.

Grant Anderson, San Benito, Texas

PHARR **WANTS YOUR ORDERS FOR QUEENS**

Goldens and 3-Banded Italians

For twelve years we have asked for your orders and we have gotten all we could fill and sometimes more. But we have ever tried to serve you right, and will guarantee similar treatment in the future. Prices of Untested, $1.00; Tested, $1.50; Breeders, 3.00 to $5.00. Write for prices in large quantities.

2-frame Nuclei, queenless,	$2.25	All
3 " " "	3.25	F. O. B.
10 " colonies with queen	8.00	Berclair.

Orders booked now—delivery last of May or June

John W. Pharr, Berclair, Texas

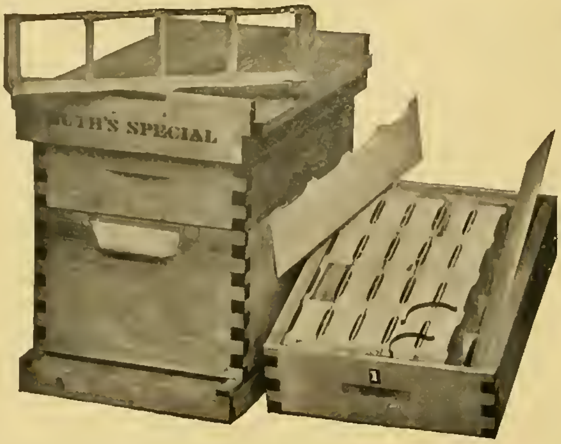
CARNIOLAN QUEENS

Carniolans are excellent winterers, build up rapidly in the spring, are very gentle, very prolific, cap their combs very white, enter supers readily, and keep their colonies strong at all times. Write for our **free** paper, "Superiority of the Carniolan Bee," explaining more fully, giving briefly best systems of management. Untested queens, $1.00 each; doz., $9.00. Full colony with tested queen, 8-fr. dove. or Danz. 10-fr., $10, in April.

ALBERT G. HANN, Pittstown, New Jersey
Carniolan Queen-Breeder.

M M

"Now, Then—Let's Talk Business"



SOON, you will need many additional Bee Supplies for the new season—Hives, Brood-frames, Comb Foundation, Honey-boards, Smokers, Bee-veils, Brushes, and whatnot. It is not too early to get your mind on this subject right now. Send for our new 1914 catalog—just off the press. A post card will do. It tells all about—

THE MUTH SPECIAL
Dovetailed Hive

This Hive has several remarkable features. The cover and bottom boards are of 7/8-inch material so rigidly constructed as to be absolutely warp proof. Besides this extra efficiency we have added a Honey-board directly under the cover, forming a dead-air space which excludes both cold and heat, making this the best wintering Hive on the market today, and far superior to others in summer. The boiling sun has no effect on the interior of this Hive, which is always comfortably cool, and prevents the comb from melting down. Another feature: When you take off the honey simply slide the Honey-board between the brood-chamber and the super, and the bees will clear out of the super by way of the Bee-escape. Price same as for the ordinary Hive.

THE FRED W. MUTH COMPANY

204 Walnut St. "The Busy Bee Men" **Cincinnati, Ohio**

P. S. Send us your old comb and cappings for rendering by our high pressure hydraulic press. It gets the last drop from the slumgum. Means money to you. Write at once for particulars.

M M

DADANT'S FOUNDATION

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DADANT'S FOUNDATION

WE MAKE IT GOOD

THE BEES MAKE IT FAMOUS

The Reputation of

DADANT'S FOUNDATION

Has been built on its merit

It is a Favorite with Beekeepers

BECAUSE

It is so well liked by the BEES

Whether it's a pound or whether it's a ton, every sheet is PERFECT

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IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec14" on your label shows that it is paid to the end of December, 1914.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 5 lines accepted.

DISCOUNTS:

3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 23d of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens. Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n — **ANTHONY BIAGGI,** Pedevilla, near Bellinzona, Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

This is the Discount Season on

BEE-SUPPLIES AND BEES

Write us stating what you are in need of, and we will quote you. If you sell supplies our discount sheet is yours for the asking. Catalog on request.

I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

"If goods are wanted quick, send to Pouder."

BEE-SUPPLIES

EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections. No shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POUDER, 873 Massachusetts Ave., Indianapolis, Ind.

"Griggs Saves You Freight" **TOLEDO** **"Griggs Saves You Freight"**

With four carloads of new goods on hand, we are now better prepared for the rush than ever. But don't wait to be in the **RUSH.** Send your order in now and have the goods on hand, ready for use.

New Illustrated Catalog of 60 Pages

We want one in every beekeeper's hands.
Send postal for one today. It is free;

White Clover Extracted Honey Wanted, also Beeswax

in exchange for supplies. It will be to your interest to get in touch and keep in touch with us.

S. J. GRIGGS & CO.
24 N. Erie St., Toledo, Ohio
"Griggs is always on the Job."

Queens That "Are Better" **Italians and Banats**

Untested Queens, 75c each; $8.00 per dozen; two or more dozen in one order, $7 50 per dozen
Tested Queens, $1.25 each; $12.00 per dozen.
Breeder Queens, $3.00 each. Foreign trade add 5 cents each extra.

½-lb. pound packages of bees after May 1, $2.00. Select queen wanted, add to this. The express charges on these will be very small in comparison with charges on frame nuclei.

One-frame Nuclei, with untested queen, $2.00 each; 2-frame, $3 00; 3-frame, $4 00. Full colony of bees in 10-frame hive, $7.00. Add 50 cents if Tested Queen is wanted; $2.00 if Breeder Queen is wanted. For ten or more colonies or nuclei, deduct 25 cents each.

I have successfully shipped bees and queens from this place every month of the year. I started two colonies Jan. 25 on their voyage to Nutsusarida, Kobe, Japan. Each contained a Breeder Italian Queen.

Dear Sir:—The two colonies of bees shipped by you arrived safely, and are perfectly satisfactory. M. SARIDA, Kobe, Japan.

My Bee and Queen exhibits at the State Fair of Texas were awarded six premiums in 1911. Italians also were awarded First Prize at the Cotton Palace in Waco, Tex.

"YOUR MONEY'S WORTH" is my motto. TERMS are *cash* with order. I refer you to Sabinal National Bank or any business firm in Sabinal.

I have ten yards, and with several hundred nuclei I can serve many customers. I solicit your trade.

J. A. Simmons, Uvalde Co. Apiaries, Sabinal, Texas

CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address,

J. C. Frohliger, Berkeley, Calif.
Greater San Francisco

Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery

Read what J. I. Parent, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES
995 Ruby St., Rockford, Ill.

Please mention Am. Bee Journal when writing.

Try My Famous Queens
From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

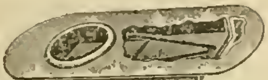
3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, one, $1; six, $5; 12, $9; 25, $17.50; 50, $34; 100, $65. Tested, one, $1.50; six, $8; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two-frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

P-O-R-T-E-R

(Trade mark.)



BEE-ESCAPE

SAVES { HONEY TIME MONEY } AT ALL DEALERS

Each, 15c; Doz., $1.65, postpaid

If your Dealer does not keep them, order from Factory, with complete instructions.

R. & E. C. PORTER, MFRS.,
Lewistown, Illinois

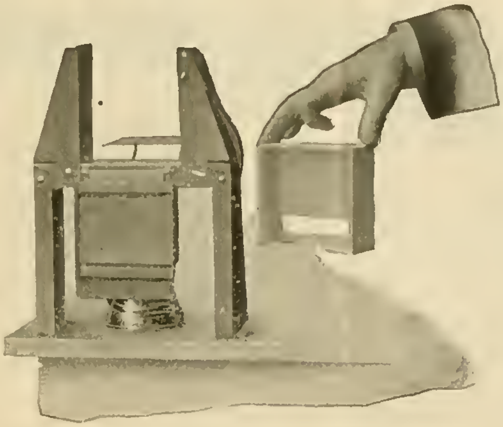
BEEKEEPERS' SUPPLIES

Such as Winter-cases, Sections, brood-frames of every description, Section holders, Comb Foundation, Supers, Hive-bodies, Smokers, etc.

Get my prices before placing your orders.

R. H. SCHMIDT
Rt. 3, Box 209, Sheboygan, Wis.

WOODMAN'S SECTION FIXER



A new machine of pressed-steel construction for folding sections and putting in top and bottom starters at all one handling.

With top and bottom starters the comb is firmly attached to all four sides, a requirement to grade fancy. Increase the value of your crop this season by this method.

The Editor of the Beekeepers' Review, in commenting on things at the recent Detroit, Michigan, beekeepers' convention, stated: "It was the consensus of opinion of those that saw the machine work, that it was the best thing for the purpose ever brought on to the market."

The Chicago-Northwestern Beekeepers' Convention in December unanimously adopted the following resolutions:

WHEREAS, This convention has been impressed by the exhibit of the Woodman Combined Section Press and Foundation Fastener, and believe that the same is practical and a labor saver for the beekeepers at large. Therefore, be it

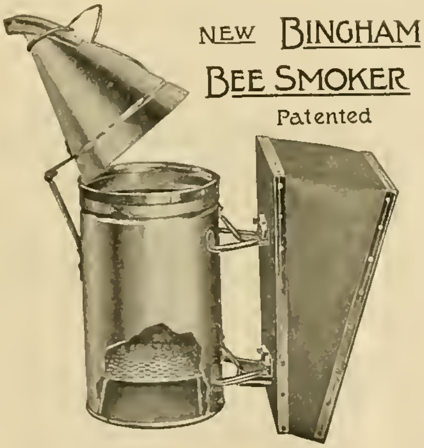
Resolved, That the Chicago-Northwestern Beekeepers' Association in convention assembled, do heartily endorse the above device as a practical machine for the beekeepers producing comb honey.

I. E. PYLES.
ARTHUR STANLEY.
W. B. BLUME.

It makes no difference how many or what kind of fasteners you have, we want you to try this one. Your money back if you are not satisfied that it is the best on the market. Send for special circular, showing 10 illustrations. Immediate shipment of all goods. 40-page catalog.

Price, with one form, 4x5 or 4 1-4x4 1-4, $2.50. Extra form, 15c. Daisy Lamp, 25c. Weight of outfit, 4 pounds. Postage extra.

A. G. Woodman Co., Grand Rapids, Michigan



NEW BINGHAM
BEE SMOKER
Patented

The New Bingham Bee-Smoker

the all important tool of the most extensive honey-producers of the world. This illustration shows the remarkable steel-fire grate which such men as Mr. France, Mr. Rauchfuss, the Dadants and others say is the **best** on the market. The Smoke Engine grate has 381 holes for the air and draft, equal to an opening 2 inches square. Buy the large sizes and be pleased. For sale at your dealers or direct. Weight each.

Smoke Engine	4-inch stove....1¼ lbs.		$1.25
Doctor	3½-inch stove..1⅝ "		.85
Two larger sizes	in copper, extra	"	.50
Conqueror	3-inch stove.....1½ "		.75
Little Wonder	2½-inch stove...1 "		.50

Two largest sizes with hinged cover.

A. G. WOODMAN COMPANY,
Grand Rapids, Michigan

I CAN PROVE IT

BY DEMONSTRATION THAT THE

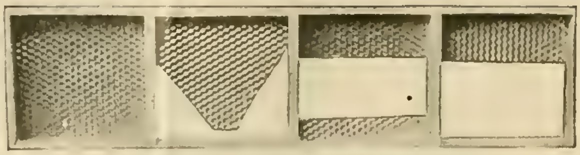
BOYUM FOUNDATION FASTENER AND SECTION PRESS

will do the work better and faster than any other kind. Both, postpaid, for $2.50. Send for circulars to—

GEO. A. BOYUM, Rushford, Minn.

"Falcon" Hives, Supplies and Foundation

Everything for the BEEKEEPER



"Falcon" Foundation made in the "Falcon" plant at Falconer, N. Y.

SUPPLIES FOR 1914—Take inventory of supplies now and figure what you will need for a slim season. Get them ready at odd times in the winter; and if there is a good season you will have ample time to re-order in April and get them for use. We like to make "Inventory Sales" of "**Falcon**" supplies, for we know that we are dealing with an up-to-date beekeeper.
INVESTMENT—What is the investment of an extra $25.00 in supplies to the loss of 500 pounds of honey? Resolve to change for 1914 and buy "**Falcon**" supplies now.
EARLY-ORDER DISCOUNT—For "**Falcon**" hives and supplies bought now we give an early-order cash discount equal to 12 percent per year. You see it pays for a strictly money basis. Write for early-order discounts, and send list of wants for quotation.
"FALCON" QUALITY—In making our beehives, all of our waste lumber is made into cheap toy building-blocks, so that we are able to put better material in our hives and goods. Get a trial lot this fall so that you can see for yourself, and still have time to order 1914 supplies.
FREE SAMPLES of our famous "**Falcon**" foundation, made in our factory at Falconer, N. Y., cheerfully sent postpaid with copy of catalog, and name of nearest dealer if desired.

FACTORY W. T. FALCONER MFG. CO., - Falconer, N. Y., U. S. A

Where the good bee-hives come from

BUY YOUR HIVES AT MANUFACTURER'S PRICES

The largest manufacturing plant of Cedar Bee-Hives on the Pacific Coast. Cedar is the best and most lasting wood for any climate. The prices for which we are to-day selling these hives is not even approached by any other first class hive made. Get our prices, they will make you smile.

BREW MANUFACTURING COMPANY, Puyallup, Washington

EARLY ORDER DISCOUNTS WILL

Pay You to Buy Bee Supplies Now

29 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.

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We Make a Specialty of Manufacturing

SECTIONS

They are the Finest In the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

SUPERIOR

GOLDEN QUEENS

Untested, $1.00; 6, $5.00; 12, $9. Select Untested, $1.25; 6, $6, 12, $10. Prices on application for tested and untested queens by the hundred. Address,

T. S. HALL, Talking Rock, Ga.

NORTHERN-BRED HARDY STOCK

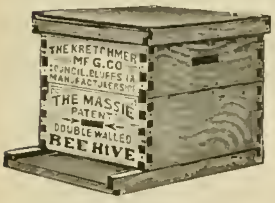
ITALIAN QUEENS
From Selected Stock
OF THE BEST
Strain of honey gatherers for 1914.
QUICK DELIVERY
Cash with order

PRICES:—April until June, Untested Queens, $1.00 each; 6 for $5.00. In lots of 25 or more, 75c each. Selected tested, $2.00. Breeders, $5.00.

W. B. DAVIS CO.
Aurora, Illinois

Please mention Am. Bee Journal when writing.

The Double-Walled Massie Bee-Hive


THE KRETCHMER MFG. CO COUNCIL BLUFFS IA MANUFACTURERS
THE MASSIE PATENT
DOUBLE WALLED BEE HIVE

THE MASSIE HIVE
For Comb or Extracted Honey

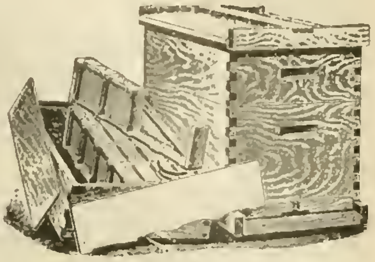
**Surest Protection for Bees—Increased Supply of Honey—
The Best Hive for any Climate**

Furnished in the clearest of lumber in either Cypress, White Pine or Redwood

THE MASSIE VENTILATED BOTTOM

Admits fresh air into the hive, lessening the chance of swarming, and giving renewed energy to the bees.

Fifty years in the bee supply business has shown us that the **MASSIE is the very best hive**, and testimonials to this effect are received daily from those who are using this hive.



The Dovetailed Hive

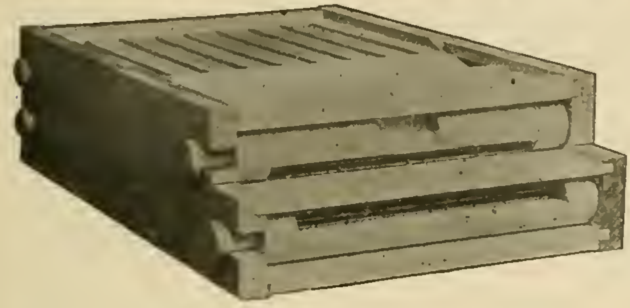
WHY NOT GIVE US A TRIAL ORDER? **SATISFACTION FULLY GUARANTEED**

We are also extensive manufacturers of **Dovetailed Hives** and **all other Apiarian Supplies.** If you are in the market for supplies be sure to get our prices before buying elsewhere. We issue a 72-page illustrated catalog which will be mailed to any one upon request.

KRETCHMER MFG. CO., COUNCIL BLUFFS, IOWA

Features of Advantage of the

ROLLER ENTRANCE BOTTOM BOARD



1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.
2. It controls the mating of the queen so that mismating is prevented.
3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position
4. It sifts automatically undesirable drones out of the hive, and cages them in the drone trap.
5. It permits ample ventilation at the height of the honey-flow.
6. It can be instantly closed when moving bees in and out of cellars or from one yard to another.
7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.
8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.
9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.
10. It is adjustable to make a shallow bottom for summer and a deep one for winter.

It contains many other valuable features which will be apparent to any beekeeper upon investigation, and if it is once tried it will always be used.

MANUFACTURED AT LIVERPOOL, N. Y.

CHAS. G. SCHAMU

TENNESSEE-BRED QUEENS

42 years' experience in queen-rearing—Breed 3-band Italians only

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested.........	$1 50	$ 7.50	$13.50	$1.25	$ 6 50	$11.50	$1 00	$ 5.00	$ 9.00	$ .75	$ 4 00	$ 7.50
Select Untested	2.00	8.50	15 00	1 50	7.50	13 50	1.25	6.50	12.00	1.00	5 00	9.00
Tested...........	2 50	13.50	25.00	2.00	10 50	18.50	1.75	9.00	17.00	1.50	8 00	15 00
Select Tested....	3.00	16 50	30.00	2.75	15.00	27.00	2 50	13.50	25.00	2.00	10.00	18.00

Capacity of yard 5000 queens a year—Select Queen tested for breeding, $5

The very best Queen tested for breeding, $10. 300 fall reared tested Queens ready to mail, $2.50 to $10 each.

Queens for export will be carefully packed in long distance cages. but safe delivery is not guaranteed.

John M. Davis, Spring Hill, Tenn.

NEW ENGLAND BEEKEEPERS

Everything in Supplies
New Goods. Factory Prices
Save Freight and Express Charges
CULL & WILLIAMS CO.
Providence, R. I.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

**Colorado Honey-Producers' Association
Denver, Colorado**

W. H. Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

BEEKEEPERS' SUPPLIES

Write us for our 61-page catalog. **Free.** Full information given to all inquiries. Let us hear from you. We handle the best of bee-supplies for the beekeeper. Our shipping facilities are good. We cater to parcel post and express orders none too small nor too large. Beeswax exchanged for supplies or cash. **John Nebel & Son Supply Co., High Hill, Missouri**

QUICK SHIPMENT OF QUEENS

of 3-band stock reared for honey-gathering qualities **Untested, June, $1.00. Later, 75c Tested, $1.50. Select tested, $2.** Send your orders now and be assured of having queens when you want them. **R. A. SHULTS, Cosby, Tenn.**

The One Subject on Which all Beekeepers Can Agree

Lewis Sections!

There are many subjects on which no two beekeepers can agree; but here is one they can agree on. They all acknowledge that Lewis Sections are the best to be had—that they excel in quality and workmanship and when you say Quality and Workmanship, you have said all there is to be said about a honey section.

Let us take you with us through the different operations and show you how Lewis Sections are really made.

First the material, which is the best Wisconsin white basswood that can be obtained, is bought by an experienced buyer by the carloads—millions of feet of it. It arrives at the Lewis factory in the board and is sorted as carefully as a woman picks over strawberries.

The best boards are then sent on their buzzing journey through the factory—fed through a planer watched over by a veteran in the business—sawed up into correct thicknesses and lengths and run through a polisher, the sandpaper polishing both ways of the grain.

Then the particular work commences. Here is where the intricate machinery gets the strips, rabbets them, scores them, dovetails them, and then the finished sections are packed away. But the secret is here: This delicate machinery is cared for like a trotting horse—the Lewis section foreman has been watching it, caring for it, keeping it right for the past thirty years.

He is Still on the Job Making Lewis Sections for You

No matter what Hives, what Frames, what Supers, and whatnot you use.

Insist on Lewis Sections

Every crate going out with the Lewis name means something to you. Here is what one of our customers has just written us:

> "We have been using the G. B. Lewis Company's No. 1 Sections for several years, and have a few other makes, but I find the Lewis goods the best. We have put up about 3,000 sections so far this season, and have not found one section in the lot that was not perfect. We find they fold perfectly and hold together where some of the other makes come apart. We use the Rauchfuss Combined Section Press and Foundation Fastener and Dadant's Foundation."

G. B. Lewis Company, Watertown, Wisconsin

Sole Manufacturers

Thirty Distributing Houses.

Send for the name of the one nearest to you.

AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., MAY, 1914.

Vol. LIV.—No. 5

EDITORIAL COMMENTS

Drone Comb Building

If you do not wish your bees to build drone comb, avoid giving empty space for comb building to a queenless colony or to a strong colony that has plenty of comb already built. A natural swarm should be hived on all empty frames or all built comb or foundation. Giving a swarm combs already half built is courting the building of drone comb, in the remaining space. Colonies possessing a young queen will build more worker comb than those who have old queens. Near the end of the season, when the queen is tired of laying, the bees will build a great deal of drone comb. The more prolific the queen is, the less drone comb will be built.

Incorrect Translations

The "Notes from Abroad" of our Editor are being translated for European journals. We do not object to it, but we wish them to employ capable translators, so that the meaning of these writings be not misunderstood. In one or two instances the sense is badly distorted.

A Lesson in Bee-Culture

We are in receipt of a very neat pamphlet with the title "Lezione Di Apicultura," by Carlo Carlini, of Santarcangelo Di Romagna, Italy. This bulletin accompanies lessons given on the kinetoscope by its author. This is proving a very efficient mode of teaching bee-culture, the world over.

The bulletin is a recommendation to its author as well as its editor. It is printed neatly on high-grade paper. Mr. Carlini recommends the American methods, and manages to give a large amount of information in a very limited space. Our Italian contemporaries are wide-awake.

Oldest Member of the National

Page 119, 1st column: "Dr. Bohrer is now 81 years old, and the oldest living member of the National Association." Does that mean that I am a dead one, or what?—C. C. Miller.

Beg pardon, dear Doctor, but we think that in your case there must be some mistake in the reckoning, and that you are a half century younger than you would have us believe. Or have the figures been inverted? How can a man of 83 be so wide awake? Aren't you 38 instead?

Swiss Description of Foulbrood

In the March number of the Bulletin D'Apiculture of Switzerland, Dr. O. Morgenthaler, of the Liebenfeld Bacteriological Station, gives a description of the several brood diseases, and describes the bacillus larvæ of White (American foulbrood) as "ropy and without perceptible odor." On the other hand he speaks of the non-ropy foulbrood as "stinking," There is some misunderstanding. Our people, without exception, have recognized the "glue pot smell" in the ropy foulbrood.

It would be well to look closely into these matters. We call the attention of the Bern bacteriologists to this subject. Our Dr. White is, we believe, the first who made a very close study of "bacillus larvæ," and ascertained that it could not be reproduced in ordinary bouillons. His "bacillus pluton" must be closely allied to the "bacillus alvei" of Cheshire. The name which he has given to "sacbrood" is very appropriate.

We hope that before long there may be a uniform description of those different diseases, on both sides of the ocean.

Bee-Culture in Siberia

We are indebted to Mr. Schaffhauser of Indianapolis, for the translation of a letter from the Amur Beekeepers' Association, with headquarters at Blagovestchensk, Siberia, asking for an exchange of their journal with ours. Their members are owners of over 200,000 colonies of bees. We extend the hand of fellowship to our Siberian brothers.

Heat Required to Destroy Bee-Diseases

Mr. G. F. White, the eminent bacteriologist at the Bureau of Entomology of Washington, has lately been making active and protracted experiments to ascertain the minimum degrees of heat required to destroy the germs of the different bee-diseases, American foulbrood, European foulbrood, sacbrood and nosema. At the meeting of the New York State Beekeepers' Association, Feb. 10 last, Mr. White gave a short talk upon this subject. He had promised us a paper concerning it, but at the last minute the department decided to publish it, instead of giving it at once through the medium of the press. Mr. White explains this to us in a short letter just received.

As soon as this report is out, we will

make due announcement of the fact. Meanwhile, since Mr. White has already made public mention of these studies, it will not be out of place to say that his experiments show the different germs causing bee diseases much more readily destroyed than was formerly believed. Their exposure for 10 minutes to the following degrees causes their destruction: American foulbrood, 194 to 212 degrees; European foulbrood, 140 to 149 degrees; sacbrood and Nosema Apis. 131 to 140 degrees.

So it is not astonishing that beeswax which has been heated to the boiling point of water should be sterilized. But this information will prove particularly important and useful in the sterilization of honey from infected colonies. We have long suspected that the sterilization point was placed too high, and that it must not be difficult to kill the bacteria at the boiling point of water or lower. The beekeeping public will await eagerly the publication of this valuable paper.

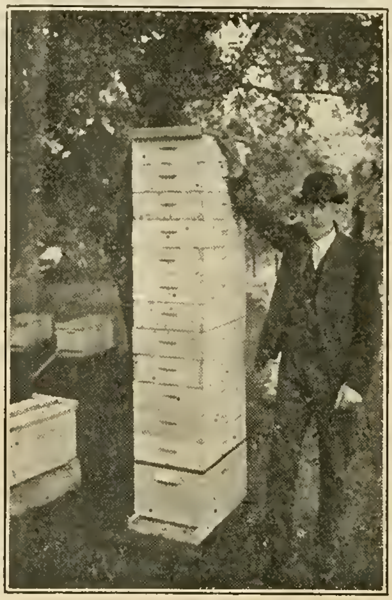
Ventilation and Swarming

In this number is contained an article by W. N. Randolph, in which he gives some views, as to what causes swarming, that are somewhat at variance with current belief. He has evidently been doing his own thinking, and it is pretty plain that he does not expect all to agree with him, at least upon one point, where he has such utter disregard for accepted traditions as to say, "I do not believe that ventilation has much or anything to do with swarming." While there are no doubt cases in which other factors so strongly favor swarming that no amount of ventilation will prevent it, the likelihood is that when other factors are almost but not quite strong enough to carry the day, lack of ventilation is the deciding factor to cause swarming.

Hindering swarming by allowing the bees to build below the brood-chamber is the plan advocated by the British bee-master, S. Simmins. But when Mr. Randolph puts up the chamber of brood to have it hatch out above the sections, is there no trouble? Others have reported that the bees darkened the cappings of the sections by carrying down bits of dark comb from above. Perhaps, however, he used only new combs.

Our Front Cover

On our front cover we give the photograph of a portion of the apiary of Mr. J. T. Starkey, a retired mill-owner at Mapleton, Minn. Beekeeping in Minnesota is going to occupy a high position in the State if the activity of the beekeepers and of the department at the University are any criterion. Below is a photograph of Mr. Starkey beside his record hive which produced 288 sections in 1913.



288 POUNDS IN 1913.

Poison Sac of the Bee

Referring to the comparison of the poison of the bee with that of the rattlesnake, mentioned on page 132, April number, Dr. Bonney sends us a letter from R. L. Ditmar, of the New York Zoological Park, stating that the poison sac of a rattlesnake becomes fully recharged with poison within about 48 hours. Has any experiment ever been made to ascertain how soon a honeybee's poison sac would be recharged after stinging?

Marking Queens

We have had several enquiries for Dr. Brunnich's method of marking queens. We have just received from him an article on that subject which will appear in our June number. His method not only serves to designate the queen, but also makes her conspicuous, so she may be readily noticed.

Foreign Expressions

Two contributors of the British Bee Journal are disagreeing upon the translation of a French term, "Rucher Ecole. The first calls it "hive school," the other "apiary school." Turn it the other way about. A Rucher Ecole is a *school apiary*, or, in other words, an apiary in connection with which a school of apiculture is conducted. That is the purpose of the Rucher Ecole of the Luxembourg garden.

Foreign terms are often difficult to translate properly. In trying to give the equivalent of "pickled brood" in the French, the writer called it "couvain aigre." This term was accepted. Another beekeeper now calls it "couvain mariné," a much better and closer translation.

MISCELLANEOUS NEWS ITEMS

Credit Due Mr. Holsinger.—The pictures given on pages 117 and 118 of our April issue are of the apiary of Mr. J. B. Holsinger, of Johnstown, Pa., instead of Mr. Hollopeter as stated. The error occurred through identical initials and similarity of names.

◆

Summer Meetings for Iowa.—The Iowa State Beekeepers' Association has arranged for a series of Field Day meetings during the summer months. They will be held at points of easy access in different parts of the State, so that at least one will be within reach of every Iowa beekeeper. It is also expected that beekeepers from adjoining States will be present at a number of these gatherings. Men, women, and children are all invited to come. At most places the plan will be for everybody to bring a basket of lunch and indulge in a picnic dinner.

At Colo, the Ladies' Aid Society will serve dinner at a reasonable price. The places and dates of 'these meetings are as follows:

At McMregor May 19. Hon. N. E. France, of Wisconin, will be the speaker of the day at this field meet, and beekeepers of Wisconsin are most cordially invited to be present. Foulbrood is widely scattered along the river on the Iowa side, and a discussion of bee-diseases will be a prominent feature of the day's program.

At Colo June 10. The meeting will be held at the Hall apiary, and a large attendance is expected. Mr. Hall's big honey house will be used as a convention hall in case of rain; but otherwise the friends will meet in the open air. Prof. Bartholomew, of Ames, will be the principal speaker. Prof. Bartholomew has charge of the new course in beekeeping at the Agricultural College, and will have something of interest for all.

On June 17 the beekeepers will meet at the apiary of Hon. Eugene

Secor at Forest City, former president of the National, and one of the best known beekeepers of the middle West. Being near the Minnesota line we hope for a good attendance from that State. Bring a basket of lunch and the baby and enjoy the day.

At Des Moines July 15. We will meet at the Dustman apiary, which is convenient to the car line. The committee has not yet announced the program, but they are planning for outdoor demonstrations of various kinds, and a record attendance is expected. DesMoines is centrally located, and has railroad facilities which enable one to reach the city from any direction.

At Mt. Pleasant July 28. The committee has already had a meeting and prepared a preliminary draft of the program which includes several speakers. They will announce their program a little later.

At Clarinda Aug. 12. Mr. J. L. Strong, who has kept bees in Iowa continuously for 48 years, will entertain the beekeepers in his apiary on Aug. 12. Everybody will bring a basket of lunch and enjoy a picnic dinner under Mr. Strong's trees. As Clarinda is only 11 miles from the Missouri line, we hope for a liberal representation from that State.

At Sioux City Aug. 20. For several years a Tri-State picnic has been held at Sioux City. Beekeepers from South Dakota, Nebraska and Iowa find a convenient meeting place at Riverside Park. The committee has not yet arranged for the day's entertainment, but they always have a good attendance and an interesting time.

At Delmar Sept. —. Frank Coverdale has become famous as a grower of sweet clover, and the picnic and field day at the Coverdale farm will attract beekeepers from long distances. The place is easily accessible from Illinois and southern Wisconsin, so we expect to meet many friends from those States. The committee will announce the date and program shortly.

Let every beekeeper make note of the time and place of these meetings, and make an effort to attend as many as possible. Friends from other States are very cordially urged to be present.

FRANK C. PELLETT.

◆

Another Iowa Bulletin.—Bulletin No. 2 has just been issued from the office of the Iowa State Bee Inspector. It is an 8-page pamphlet entitled, "The Beekeeper's Library."

As its name implies, it gives a list of free Government and State publications on the subject, a very comprehensive list of bee-books and pamphlets offered for sale in this country, and a list of the leading periodicals.

Mr. Pellett, in a private letter, states that the requests for this information were so numerous that the department responded with the bulletin.

◆

Canadian Field Meet.—The first Canadian National Field meet will be held on Victoria Day, May 25, 1914, at the apiary of Mr. H. G. Sibbald, past president of the Ontario Beekeepers' Association, at the Forks of the Credit, Ont.

Plans have been laid for handling a great crowd. Members of committees will be at the various stations to assist. Special coaches will be placed on the train for the beekeepers' accommodation, and the good old-fashioned farmers' hayrack will convey the jolly crowd to the yard, half a mile away.

All the beekeepers within reasonable distance are requested to bring their well-loaded baskets and prepare for two meals (noon and evening), to take care of those who come from long distances.

To the beekeeper confined within the narrow limits of city life, this Field Day and picnic offers relaxation and freedom from the cares and worries of business, while the producer from the country is afforded an opportunity to meet the city man.

The editors of Gleanings in Bee Culture and the American Bee Journal have consented to be present and take part, while our own fair province will have its corps of men on the "firing line."

For a day's outing no spot can surpass the beautiful Forks. Poets have sung its praise, historians have recorded its beauties, but the tongue of man cannot justly describe the sublime and majestic scenery.

Then, dear beekeeper, lay aside your cares and anxieties, come along and bring your families, and enjoy the pleasure of friendly intercourse with the great men of our ranks.

The committee present the program with a feeling of pardonable pride. Never in the history of beedom in Canada has such a brilliant galaxy of men been brought together.

In the evening of life, while dwelling on sweet thoughts of the past, may this great Field Day meet induce you to say—

"Backward, turn backward, Oh, time! in
thy flight,
Make me a child again, just for tonight."

CHAS. E. HOPPER, *Sec.*

G. R. CHAPMAN, *Pres.*

PROGRAM OF FIELD DAY DEMONSTRATION AT FORKS OF CREDIT MAY 25, 1914.

Train leaves Union at 7:20 a.m. and arrives at Forks of Credit at 9:25 a.m.

10:00 to 10:45 a.m.—General inspection of apiary, honey house, appliances, etc., conducted by Mr. Sibbald

10:45 to 11:30 a.m.—Mr. J. L. Byer, president of the Ontario Beekeepers' Association, will officiate.

11:30 to 12:00 a.m.—Greetings to all sister organizations and delegates.

12:00 to 1.00 p.m.—Lunch, provided by the ladies.

1:15 to 2:15 p.m.—Mr C. P. Dadant, editor of the American Bee Journal.

2:15 to 3:00 p.m.—Mr. Morley Pettit, Provincial Apiarist.

3:00 to 4:00 p.m.—Mr. E. R. Root, editor of Gleanings in Bee Culture.

4:00 to 4:45 p.m.—Mr. M B. Holmes, Athens, Ont., Director of Ontario Beekeepers' Association.

4:45 to 5:15 p.m.—Mr, Wm. Couse, Streetsville, Ont.

5:15 to 6:00 p.m.—Lunch, toasts, greetings, etc.

Train leaves Forks at 6:15 p.m., arriving at Union 8:25 p.m.

Ladies' Committee, white badges, Mrs. Sibbald President. Please leave baskets with the Ladies' Committee.

Information Committee, blue badge, at all stations on the line.

Field Committee, yellow badge, Mr. Wilson president.

Fare, round-trip ticket from Toronto, $1.15.

◆

Bees Do Well in North Idaho.—The annual number of the "Northern Idaho News" contains among other things, an article from the pen of George W. York, former editor of the American Bee Journal, on "Why I came to Northern Idaho."

In his article, Mr. York mentions the fact that bees do well in his section, where irrigation is not necessary to produce large crops.

◆

Pasting Labels on Tin.—Geo. S. Demuth writes: "Try rubbing the surface of the tin with emery paper, just enough to brighten it up before applying the label. They always refused to stick for me until I learned to treat the tin in this way."

From Lutz & Stahl, the firm which does such nice work printing the American Bee Journal, comes the following: "If you will sponge off the tin pails before you apply the label you will have no more trouble with them coming off. Do not use alum in the paste. Write to Gane Bro's. & Co., Chicago, Ill., for a few pounds of 'Steck-O,' and make it the same as

MR. C. E. HOPPER IN HIS "BEE LOT" IN TORONTO.
Mr. Hopper is secretary of the Toronto Association, and is pushing the big field meet to be held at the Sibbald apiary May 25.

flour paste with hot water. It will cost about 10 cents per pound in the dry powder, and we think you will like it better than anything you can get."

C. C. M.

In our last issue we mentioned a recipe for paste in which lye was used. Mr. Parisen, who sent us the recipe, says it is not necessary to cook the mixture when lye is used.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Proper Dress for the Woman Beekeeper

W. Herrod says in the British Bee Journal:

"The ideal dress for women beekeepers consists of wide brimmed hat for the veil, short skirt and knickers, with an elastic band around the bottoms to fit tightly to the leg. Long skirts are an abomination, as they blow about in the wind and irritate the bees. There is also the danger of the operator being tripped up by treading upon the skirt when doing work which necessitates stooping. A sweater and leather leggings to prevent the bees stinging the legs completes the outfit. The veil for a woman is more comfortable if sufficient length is allowed in the bottom elastic band to pass the arms through, so that it comes under the armpit as well as being pinned down at the front."

When one reads that the long skirt is an abomination, one is inclined to wonder whether this "ideal dress for women" is taken from the actual experience of a woman, or is only the imagination of a mere man. Put a man in long skirts, and he would probably have all the troubles enumerated, and a lot more beside. But it is different with a woman, she has always worn long skirts, and probably the majority of women could not be induced to wear anything else.

They are no more objectionable in the apiary than out. The writer has for years worn the same length of skirt in the apiary as elsewhere, and has never suffered any annoyance or inconvenience, and could not be induced to change. The long skirt is superior as to comfort, safety from stings, and appearance, as compared with a short skirt. The writer has never worn leather leggings, but she has worn canvas and those made from heavy linen, and has found them warm and uncomfortable. Now take the long skirt with a divided skirt, or drawers, made of gingham or print the same as the dress, made long enough to reach well down over the tops of the shoes, with a rubber tape around the waist, and one around each ankle and you will find it cool, comfortable, and safe. The divided skirt is effective, and with a long skirt is not at all in evidence, which is quite an item with most women.

A long denim apron with big pockets, cut plain, completely covering the dress is almost a necessity in the apiary, and does not blow about to irritate the bees.

A sweater is given as part of the outfit. If one is to spend much time in the apiary in warm weather, a sweater does not sound like a very comfortable garment. The cooler one can dress and be reasonably safe from stings the better. One must always expect to get a few stings; that is part of the trade. In place of the sweater suppose we substitute a pair of light-weight leather gloves (white, if possible), with a pair of white sleeves sewed around the tops, and a strap fastening the sleeves together in the back across the shoulders, a similar strap in front fastened to one sleeve, the other end of the strap being buttoned to the other. These gloves are very easily slipped off and on, and are as comfortable and safe as any.

◆

Choosing Beekeeping as a Profession

What would be your advice to a young woman concerning "beekeeping" as a business? How does it compare, in your estimation, with other lines of work, such as office work and teaching, which girls and women take up as a means of livelihood?

I have an opportunity of learning the business from a man who is a successful beekeeper and queen-rearer, and I am very anxious to know your opinion.

Mrs. Helen Sparks.

In these days when woman is so rapidly coming into her own, it is no longer so much a question whether a woman is suited to a certain business, but rather whether a certain business is one upon which any one can depend for a livelihood; for it is coming to pass that women are succeeding in almost any business in which men succeed.

Still, there is undeniably a difference. In general it is true that a woman has not as much physical strength as a man, and there are some things in beekeeping that require considerable physical strength. On the other hand, it is true that in general woman has more delicacy of touch than man, and there are some things in beekeeping where deftness and neatness count.

The times when extra strength is needed, as in lifting heavy hives, do not come very often; daintiness in handling, as in clipping queens, preparing honey for market, etc., is much more constantly in demand. Moreover, at the few times when brute strength is especially needed, it is usually possible to get some man or boy to furnish that strength for a reasonable consideration, and right management may save the need of much extra strength.

So it would seem on the whole that the advantages are in favor of women as beekeepers. Yet it does not follow, by any means, that every woman can take up beekeeping and make a fortune at it—or even a living. Nor every man, for that matter. More than for almost any other business a special adaptation is needed to make a success at beekeeping, and few have that adaptation. For that large class who put money as the only consideration, beekeeping may as well be left out of the reckoning.

As to qualifications, perhaps the chief one is a liking for the business, a liking that will turn into play what would otherwise be considered drudgery. One who does not count enjoyment in the business as part of the recompense, is hardly fitted to be a beekeeper.

Comparing beekeeping with office work, the one who thinks only of the money, and who thinks more about the stings than about the fun of working with bees, may do well to choose the office. The same may be said about teaching. But when the freedom of the blessed outer life with its pure air is compared with the confinement of office or school-room with its stuffy air, one with a real liking for the business is likely to say, "Give me the bees, every time." It is a little like this the born beekeeper says: "Even if I don't make so much money with bees, the freedom from headaches and backaches, the health and vigor that come from outdoor life, and the enjoyment I have in the business more than make up any difference in financial return;" and with the enthusiasm engendered by such a feeling the result is entirely possible that more money will be made with the bees than in office or school-room. A veteran beekeeper is accustomed to say: "If I had devoted the same amount of brains to some other business that I have to bees, I might have had more money; but then I should have been dead long before this, so where would have been the gain?"

This may not be the kind of answer you wanted; but it is perhaps the best that can be given. More workers are needed in office and school-room than in the apiary, and it is well that the majority choose accordingly; beekeeping is for the few who are willing to take part of their pay in the fun of it, and incidentally may make more money thereby.

◆

Catching Swarms in Decoy Hives

Would you kindly tell us how to catch bees in boxes on trees as stated in your February number, signed "California?"

Mrs. Rosa B. Ricke.

St. Helena, Calif., Feb. 24.

There is no trick about it whatever. A common way is to set a hive or box in the crotch of any tree, either fastened there or supported in some way so it will not be blown down. Then as soon as possible after a swarm has lodged there, better the same day, the hive must be moved to its permanent location; for if it should be left two or three days before being moved, there will be trouble about the bees going back to the old place in the tree. Of course, it may be left permanently in the tree if so desired. But there is no need of putting the hive up in a tree. It may be anywhere where bees can get to it; better where it is to stand permanently. We have had a number of swarms come and occupy vacant hives standing in the apiary, with no thought of their being used as decoys. One or more old brood-combs in the hive will make it much more attractive to the bees.

SKETCHES OF BEEDOMITES

Major Gustavus F. Merriam

G. F. Merriam was born in Leyden, Lewis Co., New York, Oct. 17, 1835, and died in Los Angeles, Calif., Jan. 26, 1914. He was educated at the United States Naval Academy, Annapolis, Md. He resigned and enlisted in the War of the Rebellion as First Lieutenant, and was promoted to Major and Chief of Artillery of the Department of West Virginia, in command of Maryland Heights and Bollivar Heights at Harper's Ferry.

At the close of the war he moved to Topeka, Kan., and entered into the wholesale and retail dry goods business. In 1875 he moved to California, chiefly in quest of his wife's health, and settled on a ranch in San Diego county, which he named Twin Oaks, and which still bears the name. His great love for beekeeping prompted him to bring 40 colonies with him from Topeka, but the long, slow route to San Francisco, and thence to San Diego by steamer, and last but not least the trip through the rugged mountain trail of 40 miles proved too much for the little fellows, and he arrived with but three colonies alive.

Beginning with these, and with what he could dig out of the caves and trees, he soon worked up a fine apiary of nearly 200 colonies. Then came the long series of drouths that the bee man of California learns sooner or later but inevitably to bear.

From 1879 to '83 he saw his hard earned apiary gradually shrink until the early spring of '84 found him with but 63 colonies to begin work with again. Then came the "turn in the lane." The extremely wet season and consequent profusion of wild flowers that so abounded in this country in those days allowed him to increase over four to one, and make 600 pounds of extracted and 50 pounds of comb honey to the colony, the largest yield in the history of the country before or since.

He introduced and always used his own make of hives and frames, and the Merriam hive and Merriam self-spacing frame is still generally used over southern California.

After 37 years of active life among the bees, he retired and moved to Los Angeles. Before leaving he was instrumental in organizing the First National Bank of Escondido, and was its vice-president at the time of his death.

[Major Merriam was personally known to the Editor whom he treated as a friend]for years. We cannot do better than insert the following letter from his son regarding him and this horrible accident:—EDITOR]

During the recent heavy rains and flood in Los Angeles, planks were laid from the sidewalks to the streets for pedestrians to get across to the other side of the street.

Father had occasion to cross the street near where he lived to a drugstore. About midway of the street that he had to follow he saw a street car approaching. The track was double, and he stepped from one track to the other to allow the car to pass, when another car coming from an opposite direction struck him, throwing him down against the track and under the trucks of the approaching car.

He lived 48 hours, but did not regain consciousness. Father was in good health, and was very happy in his little home he had made for himself and Mrs. Merriam in Los Angeles, after braving the struggles and hardships of nearly 40 years of pioneer life here at Twin Oaks. It is a shame he could not have been spared the last few years of his life and allowed to pass down the inevitable grade in happiness and peace, but such is the will of the Master.

I have left to cherish, the memory of a kind and indulgent father. He was

THE LATE G. F. MERRIAM.

a good citizen and a man whose life has been the soul of honor. He was given a large funeral, the services being conducted by the G. A. R. and Woman's Relief Corps, both in uniform, and were very impressive. The remains were cremated, and will be sent to the officers' quarter in Arlington cemetery at Washington, D. C.

Harry S. Merriam.

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Wintering Conditions and Prospects

The excellent fall flow of honey and the high quality of winter stores have given us excellent wintering, and the losses throughout the West are small. A few colonies were lost from smothering under the big snow, but *the snow* did not smother the bees. The snow melting into a slush ran into and filled the entrances of about 20 of the writer's colonies in one out-yard, and the bees were smothered. If the apiary had been easily accessible this would not have occurred. The snow was shoveled away from the front of the entrances about 10 days after it fell, and the colonies were then all right, but the damage was done when it began melting rapidly.

Breeding has been going on at a rapid rate all through March, and one of my colonies had brood in six combs on March 15. If things keep up at this rate we will have swarming during fruit bloom. This year, I believe, will prove to be a good "Alexander plan of increase year," at any rate I am going to use it some.

◆

Dr. Carton on Foulbrood

I plead guilty to being one who does not agree with all of the opinions and scientific deductions of Dr. Carton, because some of them are directly contrary to my experience with American foulbrood. There is no evidence that I know of to prove that the bacillus larvæ causing American foulbrood affects honey-bees at all detrimentally, except indirectly. American foulbrood is not a bee disease, but a brood disease, and there is not much evidence to show that strength, vigor and disease resistance of adult bees have any effect upon the disease resistance of the larvæ. If there is any race or strain of bees or any individual queen whose egg will hatch larvæ, resistant to bacillus larvæ, the owner of such a breed or strain of bees has a fortune awaiting him. I would gladly pay $100 for such a queen, and then wouldn't I sell queens?

Dr. Carton seems to hold that cleanliness of the hive affects the infection of foulbrood. This is one of the most prevalent opinions among our farmer beekeepers, and I know of several who put themselves out of the bee-business entirely by going on the principle of melting up the old black combs, while American foulbrood was present in their whitest, nicest newly-built combs. My experience has been that the strongest colonies on the whitest, newest combs contract American foulbrood just as quickly as a colony that has combs 40 years old. I do not know of any evidence to show that it is the weak colonies in an apiary that contract foulbrood first, it is generally the strongest and best ones, because they are more apt to find the unguarded honey of the infected hives in the community. Of course, the strong colony soon becomes weak.

As to foul brood being a disease of natural selection, it certainly works natural selection among the beekeepers—the incompetent are soon weeded out of the business. I recently had letters from beekeepers in the East who say that foulbrood has destroyed all their bees and that they contemplate coming West. I do not know whether these men have lost their bees from European or American foulbrood, as they did not mention it. Perhaps they didn't know. At any rate, I could give such men little encouragement, as we have foulbrood (American) in Colorado, and the man who cannot successfully combat American foulbrood will not make a very successful beekeeper.

About every month some beekeeper tells me that he has had a few cases of European foulbrood, but I have never seen a case of it in Colorado, and no sample from Colorado has ever been so declared by the Bureau of Entomology at Washington.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Editor Root in Dixie

Editor E. R. Root, of Gleanings in Bee Culture, paid Dixie a 30-day visit during a part of February and March. He touched many points along the east and west coast of Florida, visiting beekeepers.

Mr. Root combined pleasure and business in the trip. His company has a carload of bees on the west coast, which was sent down from the North in time for the spring flow. Their idea is to increase during the early flows here, then move the bees North in time for the clover flow in Ohio.

They will give us results in due time, but in my opinion it will be a success. We have the climate and the honey flows early in spring, during which great progress could be made. We hope that it will "pan out" well at the other end of the line.

◆

Cypress Lumber for Bee-Hives

The average beekeeper does not paint his hives or protect them in any way, and in this damp changeable climate the life of a white pine bottom or cover is less than six seasons. They either rot, split, warp or twist beyond usage. Paint does not add much to their life. This could be overcome if a good grade of cypress lumber were used. They would give good service for over a half century, and no painting is required. This lumber is very oily, and when exposed to the direct rays of the sun a certain amount of this oil collects about the surface of the exposed board. It hardens there so that it will turn water almost like slate. Then cypress does not warp or split as does other lumber, and it never rots.

If our bee-supply manufacturers would take hold of this idea and carry it out it would mean much towards the success of our bees. Such lumber is obtainable on most any lumber market at a reasonable price.

Apiary of P. J. Thullen in Alabama.

◆

Outlook Bright for a Bumper Honey Crop

The outlook for a great honey harvest in Dixie is good. In fact, the harvest has already been heavy in the extreme southern portion through the great orange belt of Florida, and in the ti ti belt along the line of Georgia and Florida, many colonies reaching the 100-pound mark before the first flow was half over. Conditions are still fine up to April 7, and the flow is heavy. The weather conditions have been ideal, and bees were ready for the flow.

◆

Granulated Honey in Combs

Mr. W. A. Robinson, of Carrollton, Ga., writes that he has "sugared" honey in the outside frames of his brood-chambers, and wants to know whether to cut it out and put starters in the frames and let the bees build comb in them again, or leave these combs as they are.

I have had considerable honey granulate in the combs of weak colonies during the winter, but on my first round in the spring I would use such solid combs in equalizing stores; that is, I would give these to stronger colonies that might need stores. Soon afterwards I would see some dry grains of sugar about the entrance or on the bottom-board, but soon this disappears as also does the granulated honey. They consume it.

If this honey is left with the weaker colonies, it is almost sure to cause dwindling, and in many cases the loss of colonies. When such combs once get cold in the winter they resist heat, and are almost like frames of ice in weak colonies. They cause a damp cold atmosphere which is sure to cause dwindling. So it is best to remove them as soon as possible and give them to stronger colonies.

◆

Bees on Shares

A correspondent writes that he is going to rent his bees to another party on shares, and that he (the owner) is furnishing everything except labor. He wants to know what would be the right division of the crop.

Usually under such conditions the renter is expected to nail up the necessary supplies, and to keep the number of colonies intact by increase. For any further increase he is allowed 50 cents to $1.00 per colony. The owner of the bees gets from one-half to two-thirds of the honey.

I have let many bees on shares and try to govern myself by the following standards, and give the following terms:

First, know your party well before you entrust him with the care of your bees, and be satisfied that he is an apt apiarist.

Secondly, he should be a man who has chosen beekeeping as his life vocation. He will give the business his entire attention.

Thirdly, I assure myself that he intends to stay with me over a period of years, and that my methods of management are well received by him.

Fourthly, he must, of course, be honest, and must be a man that will confide in me. Without these essentials I would not consider an application. A stranger could not rent bees from me.

Terms:—Half of the wax and honey and all increase are mine, the renter performing all the labor, setting up needed supplies for increase or otherwise. In case the bees are run for extracted honey, nothing is paid the renter for increase; he furnishes containers for his half of the honey, and ships out my half as I send him orders.

If the bees are run for comb honey in sections the renter furnishes half of the section foundation, and half the sections and shipping cases. I pay him 50 cents per colony for all increase made after he has provided for any losses, or decrease in number of colonies.

I have found this arrangement to work satisfactorily.

Another View of the Thullen Apiary.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Cool Late Spring in Ontario

We are having a late cold spring in this part of Ontario. At this date (April 14) bees have not had a flight since March, an unusual condition, and we are glad for that good flight on St. Patrick's day. But it might be worse, for in addition to the bees appearing to be in good condition all vegetation has been held back. This is better than warm weather early in the spring, which brings out the buds, etc., and is followed by heavy freezing, as friends report in more southern latitudes.

◆

Steady Cold Best for Bees

No country has a monopoly of all the good features or of the bad ones. In one southern locality where I had fond dreams of spending part of my time, I was told that in four or five consecutive years all fruit buds had been frozen. Our steady cold weather, in early spring, keeps the bees in the hives, and they do not go out to get lost. Brood-rearing is not unduly rushed to be chilled later. As a result, we haven't as much "spring dwindling" here as in localities farther south.

If there is not something in these claims, then *why* do we hear people hundreds of miles south of us complaining about the cold affecting their bees, when we so much farther north with consequently colder weather do not particularly dread the wintering of our bees.

◆

Strong in Bees—Plenty of Stores

I have just returned from the Lovering yard some hundred miles north of where I live, and although the thermometer went to over 40 degrees below more than once, the bees do not appear to have suffered. Colonies that had good queens and lots of good stores last fall seem to be ready for the warm weather whenever it comes. Cold does not kill colonies that are *strong in bees* and supplied with an *abundance of good stores*.

May is a busy month with bees in all northern sections. No matter how anxious you are to see into the brood-nests, don't tear the hives to pieces until the bees are gathering nectar as well as pollen, and the temperature is at least 70 degrees in the shade. Handling bees before anything is coming in from the fields causes them often to ball their queens, and a balled queen, even if not killed outright at the time, never amounts to much afterwards. If you clip the queens, a good time to do it is in apple bloom. If you have more than one yard this work can be done in willow bloom if weather is warm enough. Use any method you find best while clipping queens. Personally I prefer to clip them without catching them at all.

As the queen walks up the side of a comb slip a fine pair of curved surgical shears under her wing or wings, and the job is done without her being aware of it. The exceptions when I do not clip that way are when some wild black or hybrid colonies are being manipulated. In that case, *grab* the queen by the wings the first time you get your eyes on her.

Usually it is not advisable to try to find a queen at this time of the year before 9 a.m., and at that hour she will be usually found in the center of the brood-nest. About noon, and until 3 p.m., you are likely to find her on either side of the brood-nest where she has gone to lay eggs in outside frames.

In clipping time make a note of every hive examined, so that when all through the apiary you can tell the condition of every colony as to queen, number of combs of brood, etc. Then it is an easy matter to do what adjusting is necessary, and to keep the very strong colonies in check from swarming; give these colonies extra room rather than take brood from them at this season to strengthen weak colonies. Weak colonies at this time of year are not short of *brood*, but short of *bees*, and when you give them more brood to take care of you are really weakening instead of strengthening the colony. Above all things, do not attempt to unite small weak colonies at this time of year, as it usually results in failure.

The Alexander plan of uniting early in the spring, may be an exception, but I cannot speak from experience. The late J. B. Hall, who was a humorist as well as a beekeeper, told me that one spring he united eight weak colonies into four. The next visit to the yard he put the four into two, and at the next the two into one. This about describes how it will turn out in the majority of cases in ordinary seasons. Leave the weak colonies alone, provided, of course, they have sufficient stores and are well protected, and leave all equalizing till settled warm weather, when the clover flow comes on.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

Crop Conditions

April has given us 1.75 inches of rain in my locality, which is in the mountains at an elevation of from 1000 to 2000 feet, and some 15 miles from the coast. The plants are advanced for the season, owing to an unusually warm winter accompanied by a heavy rainfall in January and February. March was very dry and warm.

The orange flow was light, came very early, and is almost over. Black sage is in bloom now, and the bees are working on it, but lightly. Black sage, however, has a long season of bloom, and has a fair chance of growing better if conditions are favorable during the next month. Colonies are not as a rule very strong yet, and swarms are light. It looks, from present indications, as though the crop would be a light one. Of course, with the amount of rain we had in the winter, if we can have several more light spring rains, the sages and other mountain plants ought to give us a fair yield, but we must have a little more rain. At present the weather is warm and dry.

There were some few losses reported among beekeepers from the winter flood, but the loss is nothing compared with the good done by the rain. These winters of heavy rain storms are a great blessing to southern California, though they may entail some slight damage locally, for by this means our underground storage of water is maintained, without which we should lack for sufficient irrigation water, which is here a necessity. Our storms this season have been short, and immediately followed by warm dry winds. This has not been the best condition for the honey plants and the bees. It is, of course, too soon to think about prices. We must know what the crop is to be, but the last good season we had, the Beekeepers' Clubs, which in almost every county have now organized, did much to maintain a fair price according to grade.

Honey Plants Suitable to Drouth Conditions

Mr. Chadwick, in April number of Gleanings in Bee Culture, mentions some of the peculiar characteristics of our semi-arid plants. This opens up a wild field and an interesting one. The plants of the semi-arid regions of the Southwest show almost countless adaptations to drouth conditions, which enable them to tide over seasons of partial or complete drouth, and conserve their energies for a time of more favorable growth. The "wild alfalfa" mentioned by Mr. Chadwick frequently does not "leaf out" during a season of drouth. But when there comes a season of copious rainfall, it will put forth a vigorous growth, bloom profusely, and yield a good flow of nectar. The plant rests, as it were, during unfavorable conditions, as do many of the semi-arid plants. The honey gathered from this nectar is water white.

The whole family of Eucalyptus (introduced here from Australia), presents a vertical instead of horizontal leaf to the intense rays of a semi-tropical sun. The leaves of the California live oak "cup" or incurve in order to protect the stomata on the under side from the direct rays of the sun; and a multitude of the floral inhabitants of the Southland have their stems and leaves covered with a plant down, or woolly covering to protect them from the rays of a too fervid sun. This gives the peculiar grayish green coloring to the landscape of our lower mountains and foothill canons, when seen at close range.

There are two drouth weeds which cover our stubble fields in many localities after the crop is harvested, and yield a good supply of nectar for the bees during the early autumn. These are the white drouth weed, or dove weed (so-called because the mourning dove feeds on its seeds), and the strong-scented blue-curls or turpentine weed.

NOTES FROM ABROAD

C. P. DADANT.

At Geneva

Geneva, Switzerland, is a pretty city, and also one of the cleanest that I have ever seen. In our western country, the inhabitant of medium-size towns thinks nothing of throwing upon the streets or in the alleys any refuse which is in his way, orange and banana peels, rotten fruit or vegetables, old tin cans, paper, pasteboard, cigar stumps, etc. Some cities take measures to stop this, and are also strenuously fighting the disgusting public spitting of tobacco users.

These things are not seen on the streets of an average European city, however dirty the manure-ridden villages be. But in Europe, as well as in America, the dog nuisance has never been abated. Vagrant dogs, roaming at large with or without their master, soil the walks, the streets, the alleys of almost every city, large or small, with

61 Gryon et la Dent du Midi

GRYON IN THE SWISS ALPS.

their excrements. In Geneva, they have practically mastered even that nuisance, and the motto of "Love me love my dog," does not appear to have maintained immunity for them from the requirements of cleanliness.

Geneva, like most Swiss cities, is above all a tourist's resort. Its beautiful lake, from which the Rhone emerges with the same headlong impetuosity that characterizes its passage through Lyon, is one of the finest in the world. Using the power supplied by the Rhone, they have established a large electric plant which furnishes light and force, and is used to send a water spout some 300 feet up in the air, at the edge of the lake. One can see it from a distance, towering above the houses like a silvery plume.

Our first thought, after arrival, was to secure an "abonnement" (subscription) to the Swiss railroads. This is neither more nor less than a "pass." One may buy it for two weeks, for a month, or for a year The passes we secured were for 30 days, in second class. There are three classes in all European railroads, and the second is generally used by well-to-do people. It differs but little from the first-class, but it is more crowded in summer owing to its slightly lower rates.

To secure a pass it is indispensable to furnish a photograph, which is pasted in the little booklet and serves to identify you. So we had our pictures taken at once. Passes are useful, not only because they are cheaper than tickets, but also because they save you the inconvenience of rushing to the ticket-window at train time, when there are several hundred others doing the same thing. In a large country like the United States, this system would be impossible, because our distances are so great. But in a diminutive country like Switzerland, where natural wonders and fine scenery are close together and easy of access, no one wants to travel longer than necessary to go from one sight to another.

At Geneva, we had to change our watches again, for the reckoning of Switzerland is by the hour of central Europe, which is an hour later than that of western Europe, 5 hours and 56 minutes later than our eastern time, or 6 hours and 56 minutes later than our central time. When it is 7 a.m. in Illinois it is 1:56 p.m. in Switzerland.

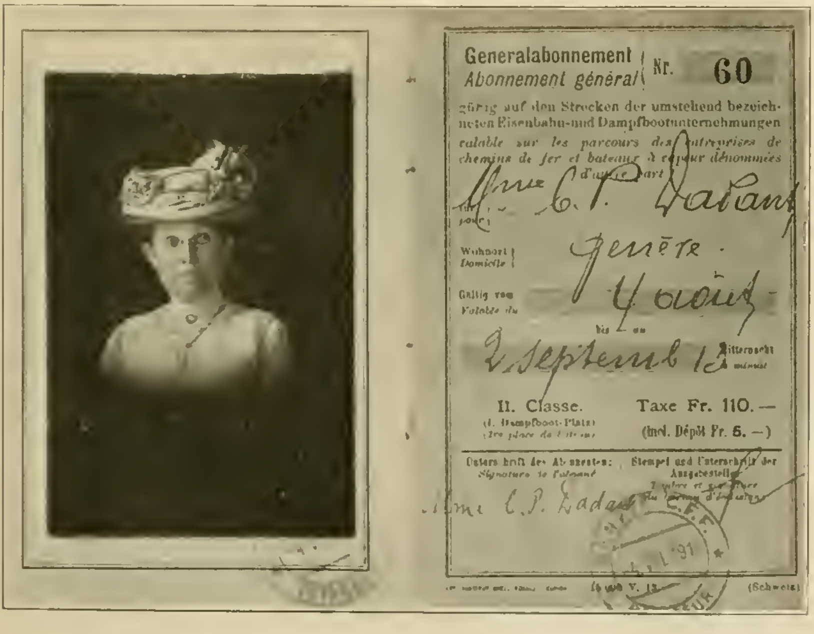
Before leaving Geneva, I called upon Mr. Burkhardt, the publisher of our French Langstroth Revised, "L'Abeille Et La Ruche," third edition. Mr. Burkhardt has one of the finest and best assorted book stores that I have ever seen. I had great pleasure in meeting him, for although he has already published three editions of our book, I had never met him before. All our intercourse with him has been through the great kindness of Mr. Edouard Bertrand, the former editor of the "Revue Internationale D'Apiculture," of which my father was so long a regular contributor.

Our next stop was with Mr. Bertrand, at his mountain summer home of Gryon. In spite of their age, both he and his wife are very active, and both were at the station to welcome us. I had visited them in 1900, and found them almost as spry as they were 13 years ago. Mr. Bertrand is of the age of our Dr. Miller, and wonderfully preserved, in spite of the many responsibilities he has had.

The village, of which one view was given in our October number, is on a very steep declivity, beyond the east end of Lake Geneva, and is reached from Bex on the main line, by a cog road. It is at an altitude of 3740 feet, and in full sight of several snow peaks. There are a few bees there, for it is mainly a land of pastures. But the best apiaries are down in the valley. Mr. Bertrand is no longer active as a beekeeper, but is still interested in all the doings of bee-culture, and a constant reader of our Journal, for he speaks and reads English as well as French. His book, "Conduite du Rucher," has had dozens of editions, and is published in eight different languages. Only one other work on bees, that of Cowan, exceeds it in the number of translations. But we will speak of this later.

The first information we received from our kind host as soon as we were installed in his pretty "châlet," was that Mr. Gubler had written him asking to be informed of our arrival, as he would seize this opportunity to pay him a long promised visit. A telephone call was made by Mrs. Bertrand, and the very next morning Mr. Gubler arrived from Neuchatel, to spend the day with us. We have spoken of Mr. Gubler, and gave his portrait in the October number. We will mention him again when we go to Neuchatel, a little further along, for that is where we had time and opportunity to appreciate him.

Mr. Bertrand has had a very exten-



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PASS ISSUED TO MRS. C. P. DADANT, AND GOOD OVER ALL SWISS RAILROADS AND STEAMBOATS FOR A MONTH FROM DATE OF ISSUE.

sive experience with foreign races of bees. His central position enabled him for years to import bees from all over the Old World. So he has tried not only the Italian, Carniolan, Cyprian and Palestine bees, but bees from the Balearic Islands and from Tripoli. These bees are yellow. They were very cross, though they are said to be gentle in their country. Our host suggested that their temper may have been changed by the change in climate and conditions. He cited as an example the white donkeys of Egypt, which were imported into France. It appears that at the time of the digging of the Suez canal, the Empress Eugénie, of France, visited Suez and was very much pleased with the little white donkeys put at her disposal and that of her ladies in waiting, by the Khedive of Egypt. They were so gentle and pleasant for riding that she expressed the desire to take some of them home with her. She was immediately presented with some of the finest specimens which the Khedive could find.

The white donkey is the beast of burden of Suez, and we are even told that some of the sand dug out of the canal was carried out on the back of donkeys. But the white donkeys, when housed in the imperial stables at Paris, proved so cross and unmanageable that they had to be promptly disposed of. Perhaps the change of treatment they received was, as much as the climate, the cause of their changed behavior. In how many instances will not our bees prove cross because ill-managed?

While at our friend's home, we received some 20 different invitations, from Switzerland, from Italy, from Marseille, from Bordeaux, etc., and we found it necessary to settle upon a definite itinerary for the balance of our trip. It became just like a fairy tale, and the constant kaleidoscopic changes of scenery, the successive receptions we were given would have caused everything to blur in our minds, had we not daily put our thoughts upon paper. These notes were regularly forwarded to our people at home, and it is from them that I now take the most interesting portions. The memorandum book which I mentioned in the March number also served a good purpose, and received much praise from Mr. Bertrand. He assured me that the investigation which I was thus carrying on would be of great benefit to bee-culture. He evidently overestimated my ability.

We had bought a cloth map of Switzerland and a Baedecker guide. These, with the little railroad map contained in our "passes," enabled us to trace our itinerary for the month.

Our next step was to take a little snow-capped mountain experience. The knowledge of kind Mrs. Bertrand was very useful in this. She is acquainted with all the fine Swiss points, and advised us to begin with Zermatt and the "Mont Cervin" (Matterhorn). So we departed for Zermatt on the afternoon of Aug. 8, after having promised our hosts to again visit them at their Nyon home before leaving for Italy, at the end of the month. In the meantime we were to visit beekeepers in both French and German Switzerland and compare the two systems.

Apiary of Mr. Cuenat at Delemont—(Photographed by J. Walther.)

CONTRIBUTED ARTICLES~

Overproduction in Ontario

BY MORLEY PETTIT, PROVINCIAL APIARIST.

MR. EDITOR, much that has been said on the above subject in the Bee Journal is very flattering to the work done. But I cannot claim any credit for the abnormally large crop of 1913. It was largely due to the unusual weather conditions. It was produced by *producers*, and not by *beginners* created at Guelph.

Our work may be classified as follows:

1. Apiary inspection. This is done among those who already have apiaries. A few men have been chosen from among the students and given training as inspectors. But they were mainly already beekeepers before coming to college.

2. Education in beekeeping at the college, consisting of lectures to all first year students. These are given most directly among those who are not beekeepers. "Langstroth on the Honey Bee" is used as text-book and followed closely, chapter by chapter. Next comes the experimental and demonstration apiary work. Then the short course. This seems to be one of the bones of contention. The courses have been held May, 1911, January, 1912, 1913 and 1914; two weeks' courses all except the first, and the attendance has been, in round numbers, 45, 50, 75 and 90 respectively. I am safe in saying that 75 percent of this attendance has been among those who were beekeepers already. Of the other 25 percent, probably half have not bought any bees yet. Several complaints were made that the instruction was all for the "old heads" and could not be followed by the inexperienced.

The experimental work consists of co-operative experiments among beekeepers. To get their co-operation, as complete a list as possible of those who have bees in Ontario was collected and application forms for the experiments are sent to this list each winter or each spring. These *beekeepers* derive benefit from these experiments. No beginner need apply because the experimenter must first have his own bees with which to experiment.

When I became secretary of the Ontario association, in order to spread the benefits to more beekeepers, I had a slip printed with a list of benefits of membership on one side and a form of application for membership on the other. It was sent to beekeepers all over the province. It worked like magic. In one year the membership jumped from 500 to 1500, the additional 1000 being nearly all at $1.00 each, and not at 50 cents as thought by Mr. Byer. Previous to that the proportion was two to one the other way.

I think it will be plain from what I have said that these 1000 new members are by no means new beekeepers, but men and women who, by their membership will become *better* beekeepers, producing more honey perhaps, but at a reduced cost to themselves and of better quality. This should be taken into account by the "pessimists."

The demonstrations in apiaries have been beneficial to beekeepers, especially in dealing with foulbrood, it being the purpose to make every beekeeper his own doctor. At fall fairs they have been in the nature of a publicity campaign which tends more to increase the use of honey than its production.

In all this, those who are already beekeepers have received by far the greatest benefit. No doubt mistakes have been made. They say that he who makes no mistakes spends his life doing nothing and doing it well. But my plan has not been to make a lot of *new* beekeepers, but better beekeepers. Of course, in helping established beekeepers we cannot help making some new ones. But more beekeepers have gone out of the business because of careless methods in dealing with European foulbrood than the Department at Guelph has brought into it.

Now about markets. As Pres. Byer has pointed out, this must be taken in serious consideration. In 1913, the leading members of the association undertook to form a co-operative association, and the annual crop report and forecast of prices was the result. This has meant thousands of dollars to the members. Three or four years ago a committee worked to formulate a plan for co-operation. Their report was dropped. Prices were too good at that time. Last fall a sort of co-operative sale was undertaken, and met with a measure of success which shows the possibilities of such an enterprise rightly managed. The convention voted the responsibility back to the county associations. Since then one county has organized a co-operative stock company in readiness for next season's work.

Mr. Byer's policy is to devote more attention to the marketing end of the business. This has been my policy. Three years ago, being asked by the secretary to prepare the program, I put on some of the best lecturers obtainable on co-operation, and was criticized by leading members for it. I was told that "practical mangement" was wanted. On the short course this year, we brought a speaker 150 miles for a special session on co-operative sale. The only extensive beekeeper who attended that session was one who happened to have his 1913 crop still on hand.

I want to commend Wesley Foster's article on pages 123 4, especially when he says: "I should think a little foresight would bring the Ontario bee-men together, before forced by the lowering price of honey." But I would compare honey with candy which sells so readily at 30 to 75 cents per pound and not cane sugar and cheap syrup.

Guelph, Ont.

A New Support for Foundation

BY A. F. BONNEY.

WHILE the slender wood splint devised by Dr. C. C. Miller is useful, it is so large, at the best, and is so often left exposed that it has not come into use to any extent, and having had some foundation sag in the hot summer of 1913, I began studying with the following result:

Take several pieces of soft white twine and fasten them to top and bottom bars perpendicularly, by punching holes with an awl and fastening the strings with plugs of wood. This makes the string taut, and leaves it lying in contact with the foundation.

Now with a spoon bent to pour a small stream pour melted beeswax over the strings, let the wax cool and the job is done. The strings support the foundation, the wax protects the strings until the bees have drawn out the uncovered parts between the ridges of wax. When they come to the strings they will remove them and there will remain nothing but clean foundation.

Buck Grove, Iowa.

[I am not so wedded to the use of foundation splints that I could not welcome any improvement, for splints have not at all times satisfied me entirely. So I am interested in Dr. Bonney's experiments. Notwithstanding his success last summer, it may be worth while to say what I think might happen at other times, basing my notions upon my own experience with splints.

Dr. Bonney makes a radical departure in that he uses twine as a temporary support for the foundation, merely to keep it from stretching until it shall be drawn out, while the splints are not expected to be removed after the foundation shall be drawn out. When I have given splints during a heavy flow there has been little trouble. But let there be a stoppage of the flow after they are given, and before the foundation is drawn out, and the bees having nothing else to do are likely to turn their attention to the splints as something foreign, and to be gotten rid of. If they would merely try to gnaw away the splints it would be much better, but when they start upon the splints they are pretty sure to gnaw away the foundation, and having once started upon it they are likely to make a gap of an inch or so in the foundation which would have been left intact but for the splints.

So I should expect that when the bees were not busily engaged at gathering they would resent the presence of a cotton string with its more or less fuzziness *more than they would the splints*, and that wherever the cotton was attached to the foundation the foundation itself would be gnawed. I suspect that Dr. Bonney's success was in a heavy flow, and I should expect that even in a moderate flow the twine would be attacked. Indeed, it was attacked, for it was removed, and it must have been removed before the foundation was fully drawn out. And in ordinary cases it would not be strange if the foundation should be also removed.

Editor Dadant suggests that Dr. Bonney might succeed if he should first saturate his strings in wax. May be; but that would change the principle, with the idea of having the strings remain, the same as the splints.

A friend at my elbow suggests that when the strings are gnawed away the foundation is without support, so that combs would break out of the frames more readily than with splints or wires. Yet that objection might be overbalanced if strings would always make a greater success than splints, and after all that has been said it still remains true that actual trial may show less trouble with strings than imagined.

Dr. Bonney says the splint "is so large, at the best, and is so often left exposed," etc. That makes me wonder what may be the size of his splints. Mine are one-sixteenth of an inch thick, and I can see no objection to their size. In the finished comb filled

ANOTHER VIEW OF THE CUENAT APIARY.

with sealed brood only a slightly elevated ridge can be seen, and it takes sharp looking to see it. When he says the splint is "left exposed," I understand that to mean that the bees have built out the comb and left the splint bare. Except in the cases I have mentioned, when the bees tear down both splints and foundation, making a flat failure, there is no exposure of the splints. Hundreds of combs may be seen with every cell perfect just as if no splints were present.—C. C. MILLER]

Soil Fertility and Honey Production

BY PROF. H. A. SURFACE.

(Read before the National Beekeepers' Association at St. Louis February, 1914.)

IT IS generally agreed that we cannot plant for nectar or honey production alone. In other words, to sow a field to any kind of crop merely for the sake of the honey it might produce is scarcely profitable. If, however, the field crop can be made a successful primary feature, honey production as a secondary feature is entirely clear gain, as most profits come from comparatively small things. We note, for example, that the packing houses of Chicago utilize every part and by-product of the hog, excepting the squeal, and it is now proposed that they utilize that in making phonographic records to aid the old style beekeepers in making more noise to help hive their swarms.

In this day of keen agricultural competition, every factor possible should aid the husbandman. Conditions are against success from continued cropping or from the old style methods. It is impossible for any husbandman to succeed without considering all the factors that enter into modern agriculture. He may be up-to-date in many things, but if not in all, he may fail. He may select seed in accordance with the methods of Holden or Hunt; he may fertilize in accordance with the latest directions from Hopkins or Thorne, and may cultivate according to Hilgarde, and spray according to Gillette, Forbes or Howard, but when crop returns are sought he must see "the handwriting on the wall" or hear the saddening statement that was made to the rich young man, who went to Christ: "One thing thou lackest." This is soil fertility with organic matter.

To buy commercial fertilizer and depend upon it, year after year, as a source of plant fertility, will eventually make a rich man poor. We do not have enough barnyard manure to meet the needs of our extensive agriculturists or horticulturists. How, then, can a poor man increase the yield by economical means? This is a question of such far-reaching importance as to justify our attention for a few minutes, even though at first it may be beyond anything pertaining to bee-culture.

The greatest element of plant food is "nitrogen." It is also the most expensive element in our commercial fertilizers, and the most difficult to get into the soil by artificial means. At the same time it is the most abundant element in the atmosphere. Practically 11 pounds of this material rests upon each square inch of the earth's surface. Why is it not directly utilized? Because it must be transformed into a compound that can be taken up by the plants. An illustration is seen in the lowly field bean. In its raw state it will scarcely sustain human life, but properly cooked there is no more nourishing article of food for mankind. Thus, when the nitrogen in the atmosphere is transformed, it becomes at once the most stimulating or invigorating element in the food of plants.

How is this transformation effected? Here is the important point. This is done in nature's laboratory by myriads of organisms known as bacteria, that live in a mutually beneficial relationship, known as symbiosis, upon the roots of the legume plants, the members of the Pulse or Pea and Bean family, botanically known as *Leguminosæ*. Upon the roots of all members of this family these beneficial bacteria, gathering and transforming nitrogen, live in great numbers, forming little lumps or nodules. Upon practically each kind there is a different species of bacterium. So the nodules taken from the roots of different kinds of legume plants differ in size, shape, color, and general appearance. These nodules or lumps are large enough to be seen readily by the unaided eye.

Take up, for example, the roots of the common white clover, white sweet clover, red clover, crimson clover, alfalfa, the locust tree, and the red-bud tree, keeping the surrounding earth with them until they are placed in water, and very gently washed to avoid breaking their minute fibers. Note the small white, pinkish or brownish lumps that are there. These are the nodules, the homes of myriads of bacteria, which are plainly seen when a lump is crushed under a compound microscope of high power. They are composed almost entirely of available nitrogen transformed from the unavailable nitrogen of the atmosphere by the vital action of these microscopical organisms, and thus rendered fit for immediate use by the plants upon which they grow, as well as by other plants grown in the same soil. Therefore, it can be seen that the more such legume plants are grown in any soil, the more fertile the soil becomes from the increase of nitrogen and organic material.

As the plants mature they draw upon the nitrogen stored in the nodules on their rootlets, using part of it in formation of tissue, especially seeds.

A bulletin, No. 145, from the Agricultural Experiment Station at Brookings, S. Dak., says: "Every ton of clover hay takes 40 pounds of nitrogen from the air, and every ton of alfalfa takes 50 pounds from the air, through the roots of these plants." Hence, by growing these crops, or other legume crops, and returning them to the soil, either directly or after they have been transformed into manure, a supply of nitrogen may be maintained in the soil.

So much for the primary story of increasing soil fertility, which is really more important than increasing the size of the farm. A secondary point for consideration is, for us beekeepers, of no small importance. Among the very best honey-producing plants in the world are the legumes. With crimson clover and locust blossoms in the spring, we have a close succession of alsike, white clover, yellow sweet clover, alfalfa, and white sweet clover, upon all of which the honey bees work to a remarkable extent. Every one of these legumes is of great benefit as a soil renewer, and they are recognized as being the chief honey-producing plants of America, with but few exceptions.

Another important point is that these are our greatest forage plants. No other plants contain as much protein or are as beneficial for live stock. The energy of the work horse and the yield of milk from dairy cattle increase when these plants are used either as pasture or hay. The growth of pork is greater when they supplement the grain feeds. The production of eggs is increased by their proper use in the poultry yard, and there is a report of a banquet of western growers, in which one of these plants—alfalfa—furnished not only bread and vegetable food, but also a food used as breakfast cereal.

To get the benefits of such plant growth for the beekeeper it is necessary that the bees have opportunity to visit their blossoms. This means that they should grow at least until the blossoms are commencing to fade or wither. The heaviest nectar secretion is just at the time of the opening of the bloom. After a flower has been visited by a bee and fertilized, the secretion of nectar stops and the blossom fades and drops.

Here, again, good agricultural practice is in accordance with apiculture profits. It so happens that the best results for hay or stock food are obtained by cutting just before the seeds form, which is just after the blossoms have passed their stage of perfection and are withering. Also when these crops are to be turned down for soiling crops, the best results are obtained by plowing them down when they reach this same stage of development. To plow down a great crop before blooming means to put into the ground too much water in the form of thin sap, and there is special danger of souring the soil then. The juice in a plant commences to become thick after it has passed the vital period of full bloom. It is also the time when it has done its greatest work in transforming and fixing nitrogen. But the fertility is not lost by using the plant as stock food. If the manures, liquid and solid, are saved and returned to the field, it will have as great fertilizing value as though it had been plowed down, and the grower will have the increased benefit of its feeding value for his live stock.

From the further standpoint of the greatest fertility from the nitrogenous nodules, it must be remembered that their best stage of perfection is reached also when the plant is at its highest point of development, or just at the end of blossoming and the beginning of the ripening of the seed. Thus whether the plants be plowed down, or cut for silo, or dried for hay, the best

A Swiss Bee Convention Group—(Photographed by Jos. Walther)

results for honey production, for soil fertility and for animal food are obtained by letting them reach a fair stage of development, rather than cutting, as is the fault of so many husbandmen before the blossoms open.

It, therefore, becomes important for every one interested in tilling the soil, to plant legume crops at every opportunity. They can be used as filler crops at the time of year when nothing else is grown, as, for example, by sowing crimson clover just before the last time the cultivator is run through the corn field. Last year the writer sowed 3 quarts of crimson clover and ½ pint of cowhorn turnip seed to the acre in a corn field. After the corn was harvested he removed tons of the best turnips for cow food and table use, and, at the present time, has a good clover sod on what would otherwise be barren and stubble. The time has come when it must be regarded as slothful for a man to leave his soil without a clover crop as to leave his implements exposed in the field during the winter. From this crimson clover sod next May will spring a wealth of scarlet bloom, looking like a field covered with ripening strawberries and humming with bees as in the swarming season.

Legumes are averse to acid soils. The soil wherein they are to grow should be sweetened by the use of at least one ton of lime, or one or two tons of finely ground limestone, per acre, before seeding. In the case of corn, this can be done by spreading the lime broadcast just before planting in the spring.

Soil inoculation is another important point in order to be sure of an abundant growth of soil bacteria and nitrifying nodules, and consequently legume growth. This can be effected best by sowing broadcast two or three hundred pounds per acre of soil taken from a field which has previously grown the legume crop that is to be planted. Another means of inoculation is to sow the crop and let it reach fair maturity, or even go to seed again on the same soil. Then turn it down and seed again. After two or three repeated efforts on soil where lime has been used, there will be an inoculation and a good growth in the future.

A third means of inoculation is through cultures prepared by different commercial concerns and sent by mail. This is the most expensive and least satisfactory means of inoculation. As a rule, we do not recommend it. The best is by sowing soil from the field that has grown the crop desired. Apply it in the evening or on a cloudy day, just before sowing seed, and harrow in both soil and seed.

While, as a rule, each legume has its own kind of bacterium, there are exceptions, as, for example, in growing white sweet clover to produce the inoculation for alfalfa. In this case the bacterium is the same.

Legumes have their own proper or best respective seasons for seeding. We sow red clover and alsike in our grain fields in February, when the ground is honey-combed with frost. Just as early as the soil can be worked in the spring we sow Canada field peas, with or without oats. A few years ago, in our own fields, we drilled Canada field peas, oats, red clover and alsike, and had a good stand of the three legumes, so that, as the peas and oats were cut, the clover field remained. Later in the spring, just after corn planting, is the proper time for cow peas, soy beans, field beans or soup beans.

Midsummer is the best time for sowing crimson clover, and the early part of August for seeding with alfalfa. Later in August, or early in September, we sow hairy or winter vetch, with or without rye, but prefer one peck of vetch and two or three pecks of rye to the acre, to give one of the best crops that can be used for a winter cover crop, renewing soil fertility and also keeping the bees busily and profitably engaged.

In conclusion, let me say that the man who knows how to use legumes in each crop rotation, and keeps the legumes always on his ground as a cover crop, will have honey in his hives and money in the bank.

Harrisburg, Pa.

[The foregoing article on soil fertility appeared in Gleanings in Bee Culture for April 15. We deem it of sufficient importance, however, to bear repetition in our columns.—Editor.]

Motor Boats and Beekeeping

BY GRANT ANDERSON.

TEXAS is the leading State in the Union for the production of honey, and is noted for being the home of bulk comb honey. Texas is also noted for the large amount of honey consumed inside of its boundaries. It not only consumes all its own production, but a large quantity is shipped in from Colorado, California and New Mexico.

When I came here four years ago I brought 35 colonies of bees with me, and thought I had a clear field, as there were no bees in this part of the county. I was told that the bees would starve here, but as I had been reared in a bee-yard, I could not believe such stories. Now there are bees in all directions, from a few colonies to over 100 in a place. As bees increased rapidly here I placed out-apiaries in the country around me, and used an auto-truck and a runabout to handle the bees, honey and queens. These automobiles proved of much value, as the time saved was valuable, and the use of the automobiles made the work more pleasant and profitable. However, as I am located on the Arroyo, a deep inlet from the Gulf of Mexico, I decided to make use of this fine water-way, and with the help of my two boys built a gasoline launch with which we moved all of our bees down the Arroyo to suitable places. This launch soon became too small for the work, and was sold and a larger one built, which we christened "Queen B." She is the largest and fastest boat on the Arroyo, always ready, and carries heavy loads of honey and bees from the out-yards home.

I am enclosing two photographs of our latest production, the Annie Lee. One photograph I took of her as she was ready to be launched and mounted on two wheels; the other one I took at our Sugarland apiary, with my son Albert at the wheel. The time this photograph was taken the Annie Lee was making 9 miles per hour.

The third photograph is of our Baby yard, which we started last spring with about 90 colonies. While only a baby, less than a year old, it increased in colonies to 230, and gave us 20,000 pounds of honey. We are now planting another baby yard of 100 colonies, of which we will give you a glimpse later. While some of our apiaries are many miles from home, we can see all of them in a very short time, as they are all on the banks of the Arroyo. We have a small house at each of the lower out-yards, where we keep supplies, bedding, provisions, tools, etc. When using the boats we have—

No horse to get stung; no mud to be flung.
We ride in peace and delight; no rock and
  no stump,
No gullies to jump, as we glide swiftly home
  in the night.
It is music we hear from the motor so dear,
As she glides us over the deep to the green
  shady shore.
Where the bees make a roar, and the mock-
  ing birds sing us to sleep.

San Benito, Tex.

Grant Anderson's Latest Motor Boat.

Swarming Notes

BY W. N. RANDOLPH.

PAGE AFTER PAGE has been written on the subject of swarming, and it must be that we have not yet arrived at its proper solution. For in the words of Bryan, "No question is settled until it is settled right."

I shall try in this short article, to approach the question from a new angle. I think the impulse comes like this: When the queen comes out of her winter's rest, with all her stored energy for egg laying turned loose, she lays more eggs in a given time than she does later on. As she fills comb after comb with brood in response to the call of the honey-flow, and with every one of her subjects as eager as she, aiding and urging her forward, when she ends up against the wall of the hive, all combs behind her full of brood and eggs, and not enough brood hatching to supply vacant cells for her, then comes a halt and consequent confusion in all departments of the hive (for there must be perfect team work here); then, and only then, the swarming impulse is born.

The remedy I used when running for comb honey with the 8-frame hive, was to supply a shallow extracting super filled with drawn combs just before the brood-chamber was quite full, by lifting the brood-chamber and placing the super beneath it. The queen would proceed on down with her egg laying. Before the super would be filled, the main honey-flow would be on, and I would put on a super of sections, and lifting the extracting super from beneath, placed it on top of all, where the brood could hatch out, and the bees fill it for extracted honey. In the interim the older brood below would be hatching out fast, and the queen would have to turn back and begin filling the brood-chamber again, *and going slower in her work*, and the swarming danger averted. I only used this treatment on colonies I apprehended would swarm.

We know that some colonies swarm and some do not. And the reason for this, I believe, is that the latter have queens who do not get a good start or do not have the egg-laying capacity of the others, and do not get brood-chambers filled until the main flow comes, and then the bees are too busy storing honey in the supers to bother with anything else. Then, too, the brood of the slower-laying queen has time to hatch out behind her and give her a job in filling her brood-chamber anew.

One of Grant Andrrson's Launches for Visiting Out-apiaries.

Since I have been running for extracted honey in the 10 frame hive, I take brood from the colonies I anticipate will swarm and replace with drawn combs, or I divide for increase. When one has out-yards of from 400 to 600 colonies to manage, and does most of the work himself, he is compelled to adopt some wholesale system.

I do not wish our wise old friends, Dr. Miller or Mr. Doolittle, to jump on me for being unorthodox when I say I do not believe that ventilation has much or anything to do with swarming. Having managed bees in three States—far apart—"locality" cuts no figure, as my experience was the same in each. In the same yard I had hives with deep entrances; hives with inch wooden blocks under the front of the hive-body; and hives with the small winter entrances, and the swarms, when they came, came from all alike. Let a flow set in strong enough to keep the queen and bees humping themselves and yet not strong enough to go into the supers, then look out for swarms galore if the queen is not kept going and the bees have plenty of super room.

I refer here to prime or normal swarming. I have very few after-swarms.

Letohatchee, Ala.

Isle of Wight Disease

BY J. A. HEBERLE, B. S.

THE COMMISSIONERS appointed by the English government to investigate this dreadful bee-disease which was first noticed on the Isle of Wight, but has since spread over all England, has now finished its investigation. Dr. Graham Smith and the other investigators state that the disease is caused by the parasite Nosema Apis. In cases where colonies without apparent cause dwindled and died, the presence of Nosema Apis could be proved. No parts of Great Britain are free from this disease. Certain symptoms of the diseased bees like the disability to fly, the running and crawling about the ground in front of the hives, the dwindling away of colonies are general symptoms. There are many other symptoms reported, but none are characteristic of this peculiar disease.

It is probable that the disease is epidemic, but that it attracts attention only in its most virulent form. The malignant character of the disease is especially noticed after a succession of wet and cold springs and summers, and continues then through years of favorable seasons.

It was proved that the disease could be produced in healthy bees with the spores from bees that died of this disease; also by feeding healthy bees with syrup or honey containing spores, or if healthy food was contanimated with the excrement containing spores. Infection also took place when healthy bees fed on candy that was first used by diseased bees; when bees that died of this disease were put with healthy bees; when healthy bees were put in hives that had been occupied by diseased bees.

It appears that only the spores of the parasite cause infection; and that water and moist places near the apiaries contaminated with the excrements of diseased bees are the principal factors in spreading infection. Pollen and nectar may occasionally cause infection. The disease may also be spread from colony to colony—from apiary to apiary—by gathering workers and now and then by robbing, by lodging an infected swarm in a healthy apiary, and by using old hives that had once diseased bees in them. Buying bees may be the means of infection. Other insects which come in contact with bees, wax moth, wasps, ants and wild bees may in rare instances cause infection. Cold, wet weather seems to favor very much the spread of the disease. Among the number of remedies recommended there was not one which was really a success, although the use of some showed a favorable change of symptoms.

ANDERSON'S ONE-YEAR-OLD BABY APIARY—230 COLONIES.
Record 20,000 pounds in one season from 90 colonies, spring count.

PRECAUTIONARY MEASURES RECOMMENDED.

Prevention is the main thing. Healthy colonies should be removed from the neighborhood of diseased ones. Water should be given near the apiary, and daily renewed. Dead bees, combs and frames from diseased colonies should be burned and the hives thoroughly disinfected. The ground around the apiary should be turned over and mixed with lime. Buying and selling bees in a diseased district should be prohibited.

DEVASTATION CAUSED BY THE ISLE OF WIGHT DISEASE.

Jos. Tinsley, of Stone, England, in an article in Gleanings in Bee Culture, Sept. 15, 1913, states that the beekeepers are considerably disturbed by the prevalence of this disease, and although it is some time (several years) since it first appeared, it shows no signs of abating. Formerly it was known more as a summer or early spring complaint; but in our own country we have had a rude shock in the way of winter mortality.

Foulbrood is insignificant in comparison. I have seen 60 pounds of honey produced from a colony suffering from foulbrood. I doubt whether we shall see 6 pounds from one suffering from the Isle of Wight.

NOSEMA APIS—AN ANIMAL PARASITE.

This parasite was discovered in 1907 by Prof. Dr. E. Zander, of Erlangen, Bavaria, and with the advice of Prof. Doflein, of Munich, a specialist of renown, named Nosema Apis, to show the near relation to the Nosema bombycis, which causes the silk worm pest (Pebrine), and about 60 years ago ruined the silk industry of France, causing damage that was estimated at five hundred millions of francs ($100,000,000).

The size of the parasite is given as 1-200 mm. in length, and 1-350 mm. in diameter (1 mm.=millimeter, 25 mm.=1 inch). It inhabits the intestine of the matured bee, where it rapidly grows and multiplies. The color of the middle intestine is normally a clear reddish to brown, but after the parasite has lodged in it in great numbers for a while, the color changes to a dull, turbid, milky white. The parasite changes after a while to a durable form called spore. These spores are something like the seed of plants. When the spore gets to a place of suitable condition, the intestine of the grown bee is such a place, it develops itself again to the parasite that works destruction, multiplies, changes again to a spore, and if opportunity favors it, the cycle of development is kept up.

DIFFERENCE OF OPINION AMONG INVESTIGATORS.

Dr. Zander considers the presence of Nosema Apis as a great danger to beekeepers, and the disease caused by this parasite more alarming than foulbrood. He states that according to the British Bee Journal, in Australia, out of 1783 colonies, 996 died. Mr. Percy Wilkinson, of Melbourne, sent Dr. Zander some of the diseased bees. Mr. White, of Washington, found the Nosema Apis in America.

Dr. A. Maassen, of Berlin, and Dr. Hein, of Munich, do not think the parasite itself so dangerous, so destructive. Nosema Apis is widely disseminated in Germany. Dr. Hein states in the Muenchner Bztg., that Dr. A. Maassen had in the fall of 1909, 30 colonies of bees that were strongly infested with Nosema Apis, and wintered them.

In the spring of 1910, 3 colonies showed dysentery; 2 had a heavy loss of bees, and one died apparently for want of stores. The other 24 colonies wintered well and developed themselves normally. Those that had dysentery recovered. It was easy to prove the presence of Nosema Apis in all the colonies. In the spring some of the colonies showed what is known as May sickness without great loss. Investigation showed that the parasites were present in *very large* numbers. The colonies that had the May sickness got over it and thrived during the summer just as colonies that had not been infected; but some of their bees were still infected with the parasite. Only the young bees just hatched were at all times free from it.

Dr. Maassen's experiment tends to show that a Nosema infection is not necessarily very disastrous, since even the 24 infected colonies that were taken through the winter did not show an unusual number of dead bees. The wintering was good, and the developing in spring was good. Only 10 percent of the Nosema-infected colonies that were wintered showed dysentery in the spring, and even these got over it and developed into useful colonies.

Opinions are conflicting, and these opinions are corroborated with good testimony. Probably both parties are right. Peculiar conditions are necessary so that the parasite may fully develop its destructive character. It may be that only weakened colonies or bees whose power of resistance has been weakened through hereditary influence or conditions caused by inclement weather or poor management succumbed rapidly. Probably considerable damage is done by shortening the life of the worker bees infected, and might be overlooked, even by a keen observer. This would show itself in a smaller amount of surplus; still it would be difficult to positively blame the Nosema for it. It will be well to keep our eyes open and call for more light—from science—at the same time keep our bees in first-class condition regardless of the Nosema Apis that may lurk near our apiaries,

Markt Oberdorf, Bavaria, Germany.

[In the foregoing article, Mr. Heberle gives us a very good short history of the Isle-of-Wight disease. We believe his conclusions are right. In dry climates there is evidently but little to fear from the May disease or from the Nosema Apis. But it is well for the beekeepers to be on the lookout. Now that we have efficient bacteriological workers at Washington, it would be a mistake to remain in the dark for want of enquiry. If your bees suffer from any cause, be sure and send samples of the diseased insects to Dr. G. F. White at the Bureau of Entomology of Washington, D. C.—Editor.]

The Chaff Hive

BY J. E. HAND.

On page 19, Dr. Bonney has shown the bright side of the chaff hive situation in a very fair and candid manner. There are two sides to most questions, however, and with due respect for the opinion of Dr. Bonney, and others who may be interested in the problem of winter protection for bees, I will endeavor to present the practical side of the chaff hive question as it appears from my point of view. Barring two slight errors of minor importance, I can endorse what friend Bonney has said, but my object is to reveal conditions that evidently have escaped his notice.

Undoubtedly some will feel slighted by his statement that there are but three chaff hives listed in the country. The champion chaff hive is advertised quite extensively by western dealers, and is not materially different from the others. Others will have cause for complaint because of his statement that all use chaff trays, but it is to his credit who has dispensed with that nuisance, as well as with the nuisance of deep telescope covers.

A noticeable feature of the chaff hive situation is that during the past quarter century they have been deteriorating in quality and advancing in price until in most cases the price is out of proportion to the service rendered.

More than 25 years ago A. I. Root introduced a chaff hive that provided much better winter protection than any that have appeared since that time, but it being quite elaborate, the advance in the price of labor and material increased the cost of its manufacture until the selling price rendered its use prohibitive. This resulted in the modification of the original hive, which reduced the price as well as the quality, for it was robbed of its most desirable features; and still the price of labor and material has advanced until the cost of production has rendered the second edition prohibitive, and this is also true of all chaff hives.

In a new catalog issued by a western firm, chaff hives are listed at $4.25 without any summer equipment except frames; which means that we must pay that price for indifferent winter protection, with an added expense for summer equipment necessary to make it an all-the-year-around hive.

When we consider that the price is as low as is consistent with the cost of production, the logical conclusion is that the times are fully ripe for a revolution in wintering methods that will consign all such expensive wintering equipment to the scrap heap in favor of a hive that provides perfect protection for its colony 365 days in the year with practically no extra equipment more than is required for summer use. The hive that will do it is already in the field; it is named "the convertible hive," and is the result of a happy blending of the principles of economy of construction, simplicity of equipment, and utility of manipulation. No hives for sale.

BEES AND ODORS.

On page 20 is an article by Arthur C. Miller, on odors and their relation to the introduction of queens. While the direct introduction of queens with the fumes of smoke from burning tobacco has been practiced for many years, to Mr. Miller belongs the credit of the discovery that clean smoke from ordinary combustible material answers the purpose fully as well with none of the evil effects upon the bees resulting from the sickening fumes of burning tobacco. While this important discovery will undoubtedly mark an epoch in the history of queen introducing methods, it is not clear wherein the success of this method disproves the odor theory; on the contrary, it may be so construed as to present about the strongest circumstantial evidence in support of that theory that has yet appeared.

His experiments with different odors and perfumes smeared over queens prove nothing, when met by the one fact that smoke is a great deodorizer, for the defence will stoutly maintain that in the presence of smoke all other odors are obliterated, while the one odor, that of smoke, permeates the hive and contents, and deprives the bees of their only means of distinguishing friends from strangers; for with bees it is evident that unity of odor means unity of associations, and smoke evidently is the most harmless and economical unifier of odors in existence.

It is useless to ignore the fact that the sense of smell is more highly developed in bees than in most animals and insects, and we have tangible evidence to show that this faculty enables them to locate fields of nectar at a considerable distance from the hive. Bee hunters are enabled to attract bees by the odor of burning honey, and strong circumstantial evidence is not lacking to show that the fine sense of smell is their only means of distinguishing friends from strangers.

Mr. Miller has said that pounding on the hive, and otherwise disturbing and exciting the bees will answer the purpose of direct introduction of queens as well as smoke. This is accounted for by the fact that when bees are thus ruthlessly disturbed they become panic stricken to such an extent that all their energies and senses are devoted to the one object of self preservation; and if a strange queen is given at this time, the chances are that she will not be molested, because her presence will not be noticed until such time as she will have acquired the colony odor, when she will be perfectly safe. It is reasonable to suppose that this odor is very quickly acquired where the queen has access to the combs and honey.

Without fear of successful contradiction, I maintain that when deprived of the colony odor, bees will readily and eagerly accept any number of queens without smoke or disturbance of any kind. We have proved this hundreds of times, when putting up small packages of combless bees for shipment. We first scoop in the required amount of bees, drop in a strange queen, and close the hole. Since smoke is the most economical method of obliterating the hive odor, it is undoubtedly ahead of all other methods of direct introduction of queens, but evidence to disprove the odor theory is sadly lacking.

The article mentioned is rendered further conspicuous because it introduces a trait in bee nature that has escaped my notice during the 35 years that I have handled bees. This refers to the statement by friend Miller, to the effect that when combs with adhering bees are taken from a hive and kept separate for 10 minutes or more, upon again returning them to the hive the bees will fight among themselves until one-fourth of the colony is destroyed. Such an unusual occurrence if reported by a novice would cause a smile and a whisper, "robbers." In any event, however, such occurrences are of too doubtful nature to be accepted in support or disapproval of any theory whatsoever. The logical conclusion is that the odor theory still remains intact.

Beekeepers I Have Known—"Hamlin B. Miller"

BY FRANK C. PELLETT.

BEE FEVER, like other diseases, varies in the intensity of the attack. Ham Miller has it bad. Doctors tell us that disease is seldom contracted in the open air, but that is just where Miller was exposed.

Miller has a print shop in Marshalltown, and, by the way, he must have a good one, judging from the quality of his output. Not long since the M. D.'s caught Miller unawares, looked at his tongue and felt his pulse and decided that he was going into a decline. It was accordingly decreed that he must stay outdoors, get tanned, play with the kiddies, and amuse himself with a lawn mower and a croquet set.

Living in town, he has near neighbors. He had known, in a dim sort of way, that there were others living near, but up to this time he had been so occupied with his print shop that he had not had time to observe them closely. One morning not being permitted to go to the shop, and as the prescription required that he be outdoors, and the lawn had been mown three times already, there was really nothing to do. He looked over the back fence to see what his neighbor might be about. He could hardly believe his eyes, for there, standing over an open hive, was a live man. Miller nearly had a fit, but the neighbor was not the least bit excited, although he removed the frames, examined the interior of the hive, and even allowed the bees to calmly crawl over his hands. When our friend had sufficiently recovered himself, he began to ask questions, and within a few days there was a sudden rise in his temperature, for he had contracted another disease, which was destined to become sufficiently acute to demand severe measures in its treatment. Miller had developed a case of bee fever in its most tenacious form.

Well, they bought bees (by this time Mrs. Miller was developing slight symptoms also), bee books and bee journals, and all the experiments that were tried on the luckless occupants of those pretty hives in the Miller backyard would fill a book. Now when you meet Ham he is prepared to talk bees, morning, noon or night.

Of course, with the fever running so high, our friend from Marshalltown was one of the first on the ground for last year's convention. The beekeepers present, recognizing the value of enthusiasm, elected him as a member of the board of directors of the State Association. It was not long before it became very apparent that no mistake had been made, for Miller was wide awake when anything relating to the interests of the society needed attention.

Hamlin B Miller.

On one occasion I was called to Des Moines, by a member of the legislature, to appear before a committee in support of the bills asked for by the association. About the first thing this member showed me, was a letter he had received from Miller. This letter was written on a nice letter head which advertised the fact that Hamlin B. Miller conducted a print shop at Marshalltown, where he was prepared to furnish nice printed matter for your correspondence and a rubber stamp to sign your name. The letter demanded, or rather commanded attention from the very first line, and it fairly sizzled with information about foulbrood among bees and glanders among horses, and what the legislature owed to the beekeeping interests of the State. It soon became apparent that this member's neighbor had a similar letter, and before long I discovered that every member of the house and senate had a letter from Ham Miller, appealing to them to look after the interests of the beekeepers. These letters were not without influence, I feel very sure.

When Miller had honey for sale he persuaded his neighbors that it was just a little bit nicer than any other honey they had every tasted, and proved it to them by sample. He accordingly sold his crop for 25 cents per pound, and it was worth it, too.

Miller has not kept bees very long, and as yet does not keep very many, but his is one of those cases of for better, or for worse, until death do us part, and in due time we will see him on the front row with the big honey producers. A more enthusiastic beeman was never allowed to run at large, and had he made as much noise about his printing as he does about his bees, he would have long ago had to run a night shift to keep them from getting swamped.

Atlantic, Iowa.

Odor and Queen Introduction

BY ARTHUR C. MILLER.

DR. BRUNNICH'S article in the March issue of the American Bee Journal is interesting, but at the same time a bit puzzling. He says the "absolutely safe introduction of queens" is for him "an unsolved problem." Just what does he mean by "absolutely safe?" In this country, if we can average 99 percent of successful introductions when putting in thousands of queens, we consider such a system as near "absolutely safe" as anything human can be.

He says he tried the direct method years ago, and that the new direct method "does not differ essentially from the old one." It differs very materially. I, too, tried the older direct methods many years ago, dropped them, took them up again, and finally evolved the system which is now so successful. If Dr. Brunnich will dequeen a colony with as little disturbance as possible, then close the entrance to the width of an ordinary mailing cage, give the bees two or three puffs of thick white smoke, so it will drive well inside the hive, close the hive for three to five minutes, then run in the new queen, leaving the colony confined for five minutes, and at the end of that time opening a small space at one corner, giving the whole entrance when they have quieted down, I think he will have no further trouble with the direct method.

The new method being so successful here, in so many thousands of cases, I cannot but feel that the Doctor has missed some part or overdone some.

As to the odor factor: He refers to anointing a queen with the juice of crushed workers. The experiment proves nothing. Had he anointed several queens thus, fixed a similar number with an odor known to be disliked by the bees and used a similar number without treatment, and then had those anointed with the crushed workers accepted and the others destroyed, his experiments would have indicated something.

I have anointed queens with all sorts of odors admitted to be repulsive to bees, as human perspiration, that from animals, etc., and by the smoke method have not failed to have all of them accepted, which indicates that such odors do *not* cause the bees to refuse the queen.

He says: "It is not to be forgotten that not in a single circumstance does the scent decide the good or bad result, but there are always a number of facts to influence it," and I heartily agree with him. But I further maintain that scent is the *least* of all the factors, admitting at the same time that bees have an acute sense of smell for some things.

He says he upholds the theory that it is the scent which enables the bees to distinguish each other, and he cites sex odor in moths. But I beg to call his attention to the fact that the male bees are not attracted to the queens by odor, but by wing sound, just as with mosquitoes, in which it can be observed excellently.

I admit that each *colony* may have its individual odor, but I deny that a bee, after a long foraging trip, will retain enough of it to affect her reception by an alien colony. On the contrary, every observation indicates that it is wholly the individual bee's *behavior* which governs her reception.

Here are some facts which go far to disprove the theory of the individual odor affecting a bee's reception. A worker returning laden from the field may enter anywhere. Golden Italians are the worst sneak thieves on record. They enter any colony at any time unchallenged, help themselves and take their load away. There is no difficulty in observing their behavior in an apiary of darker bees.

Queenless bees will join a near by colony with a queen, and no sign can we see that the receiving colony notices them as strangers. In one of my apiaries I use many "baby nuclei," and I transpose and move them at pleasure and get no fighting. It may be said it is because they all come from one stock hive, but they do not. When I am through with any of them, combs and bees are set into any stock hive. Fight? Rarely. But the field bees from these nuclei after hovering about the old location may be seen going into near by hives, both nuclei and full colonies and not a challenge. Have they lost their odor, or have the guards forgotten to smell?

A drone can go in anywhere and not be challenged, unless a colony is expelling its drones, and then no drone can enter. Have not drones the odor of their own colony?

Dr. Brunnich very properly questions the identity of unmarked queens. I use a system far better than paint. All the queens of one year have the wings on the right side clipped, all of the next year those of the left side clipped, and I requeen all colonies every year. If I take out a lot of queens with right wings clipped, and run in a lot of new ones with left wings clipped, and all my colonies so treated have those left-wing clipped queens there until the next year, it will take something more than argument to convince me that the queens in those hives are not the ones I put there.

Dr. Brunnich works with black bees which we Americans will not tolerate. My work is chiefly with Italians, but I requeen all black colonies I meet within my inspection work by the direct method, and have been as successful as with Italians.

As to requeening without dequeening, I put it forward as something worth further investigation *in connection with* the new method of introduction. I expressly stated that it was as yet quite in the experimental stage, but that it was promising enough to warrant further research, and I believe that if many are at work on it the knowledge of its limitations will be the sooner known.

I beg that Dr. Brunnich will try the new direct method again, for if he can master it, he will find it of great help and pleasure.

Providence, R. I.

Using Dry Combs to Prevent Shaking Twice in Foulbrood

BY THOS. CHANTRY.

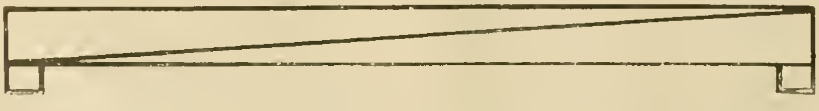
IN YOUR REPORT of the Iowa State Beekeepers' Association the explanation of my method described by Mr. E. G. Brown, I fear is a little misleading (page 56). It says that the bees at once deposit the honey of their sacs into that dry comb, and by removing it promptly there is no need of shaking the second time. In reality it takes two days to get the honey, and then there must be a honey-flow. The second day in the evening, during a honey-flow, quickly remove the comb; brush in front (not shake as some honey might be shaken out), and place the comb in a hospital or boil it, and in mild cases that will cure. For the worst cases use two or three old worthless combs and no starters for two days. Then in the evening remove as above and then use one dry comb and starters as stated by Mr. Brown, and your worst case is cured. Our reasons for using this method is to prevent absconding, which it does to a minimum.

I have also proved that you can use from four to six deposit combs (any good dry, clean combs) for two days. At any time of day take them away as above stated, and repeat with other deposit combs according to size of swarm for two days as before, taking them away as before, and then give those bees a full set of clean combs and they are cured. These deposit combs that contain the honey from the bees along with their nectar may be extracted and every cell filled with water and then immersed in clear water and weighted down for 24 hours, then the water thrown out and the comb filled again with fresh water and rinsed out. They are then clean and need not be destroyed.

We have also proved that all combs from a foulbroody colony that are *completely* filled with honey may be cleaned by extracting and washing as above, by filling and soaking 24 hours, and filling again and rinsing them.

This process is quicker than to melt the combs and refill the frame with foundation, if we are properly prepared for it. It increases the yield considerably more than the use of foundation.

Wellington, Utah.



A CUTE COVER—When in Sioux City, Iowa, last fall I saw at Mr. Espy's place a hive cover made of cedar or cypress shingles. They were put thin to butt ends, and there was a thickness of tar paper between them. I am not quite sure about the cleat across the ends, but I think they were on. This could be doubled, butting a ¾-inch strip between the two, and thus have a cool cover at a very nominal cost, or one such as illustrated under a cover would serve that purpose. One should, I think, use a ¾-inch wrought nail that it might be clenched easily. Common wire nails are rather stiff.—A. F. BONNEY.

Should We Retail Extracted Honey in Liquid or Granulated Form?

BY C. B. HOWARD.

(*Read before the New York Association of Beekeepers' Societies.*)

I BELIEVE this is a very important subject, and one that should be studied and analyzed by all producers of extracted honey, so that they may be able to place their products before the consumer in the most salable and profitable form.

The beekeepers are going into the production of extracted honey more and more each year, and it behooves them to try to create a larger demand for their products from the retail merchants. Putting up extracted honey in the liquid form in glass packages for which the consumer has to pay from 20 to 80 cents per pound, is well enough as far as it goes, but the trouble with this method is that it does not dispose of the honey in sufficient quantities to move the ever increasing supply caused by the beekeepers changing from comb to extracted honey production.

If the production of extracted honey is to be more profitable than comb, it is necessary to be able to sell the same for at least a trifle more than half the price of comb honey, and we should be able to place it before the masses at a price that will appeal to them as being an economical food as well as a wholesome and delicious luxury.

In retailing extracted honey it depends largely upon conditions whether it should be in the liquid or granulated form. If it is being peddled out or sold and delivered direct to the consumer in glass jars or tin pails, it is usually best to have it in the liquid form. This method is all right for small quantities, but the trouble is, the honey is only offered for sale by a few producers and to a very small percentage of the consumers.

What appears to me to be the right and best way to get the public to use extracted honey is to sell it in the granulated form through the regular channels of trade, the produce stores.

The following method seems to be the best way to obtain these results: Have tin trays made about one inch larger than a 60-pound can of honey laid on its side, with the sides of the tray about one inch high so as to retain any honey that might become dislodged, place these in the store where the honey is to be sold, in a glass show-case, so the honey will be protected from dirt and dust. Cut the can of honey open and place the solid granulated cake on the tray. It is then ready to be cut off, weighed and sold by the pound in quantities to suit the customer, the same as you would sell lard or butter, and at a price that will appeal to them as being an economical food. If the store-keeper has the room it would be advisable to have three trays, one for clover, one for amber, and one for buckwheat honey. If the space is limited, it would be best to place on sale the clover honey. This method reduces the cost of handling and eliminates the expense of liquefying and filling glass or tin packages, and the cost of labels and packages. It places the honey before the consumer at the lowest possible price.

This is one of the great questions before the American people today, to get products from the producer to the consumer with the least possible expense, so that the so-called high cost of living may be reduced. Honey may be placed in stores in this way at from 8 to 11 cents per pound, and should be retailed at from 12 to 15 cents per pound. This is the lowest price at which honey in any form can be retailed for at a profit to both the producer and seller.

Mr. C. B. Howard in His Apiary.

This is no theory that has not been tried out, but the actual results that have been under my observation as a wholesale dealer. I would cite to you one instance in a small city in this State, where over 10,000 pounds of extracted honey were disposed of in this manner in one winter, in addition to the regular amount of comb honey and extracted sold in glass. If this method of selling extracted honey could be carried out throughout all the markets in this country, a vast amount of honey would be consumed, and there would be a demand created for extracted honey unheard of in the annals of extracted-honey production.

Geneva, N. Y.

CONVENTION PROCEEDINGS

The Pennsylvania State Beekeepers' Convention

The Pennsylvania State Beekeepers' Association held their 10th annual meeting in the State Capitol at Harrisburg Feb. 20 and 21. It was a very lively meeting, and from the point of enthusiasm perhaps the best ever held.

Dr. H. A. Surface, State Zoologist, who is the president, was in charge of the meeting. The address of welcome was given by Hon. N. B. Critchfield, who is the Secretary of Agriculture of Pennsylvania.

The subject of "Comb and extracted honey in the same apiary" was discussed by H. P. Faucett. He runs his yard for both kinds of honey, and says that colonies that sometimes cannot be coaxed into section supers will work in extracting frames.

F. G. Fox spoke on "500 percent increase and a crop of honey." He demonstrated how it is possible with natural swarming to take the parent colony after the swarm has issued and divide it into nuclei and build these up into full colonies.

The foulbrood inspectors, Geo. H. Rea and Jno. O. Buseman, made their reports on inspection. These were quite interesting in facts, and exceedingly amusing in the experiences the inspectors had with the different kinds of people they met in their rounds. Inspection is doing a great work for beekeeping interests simply by the contact of the inspector and the education that is spread over the State in this way. Bees are yet kept in all sorts of ways: logs, bee-gums, straw skeps, soap boxes, and even some have been found in beer kegs.

The Coons hive for comb honey was a demonstration made by R. L. and A. N. Coons, of Coudersport. This is a shallow chamber hive of their own make, with which they have been very successful. This year's crop was 28,000 pounds of section honey from 400 colonies. These people, father and son, are the largest producers in the State.

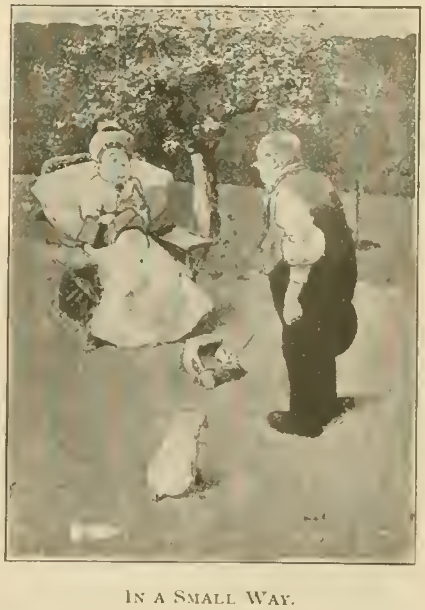
Dr. E. F. Phillips, of the University of Philadelphia, who was on his way back from the National convention at St. Louis, and who was the delegate from Pennsylvania to the convention, gave an address on "Two Essentials in Honey Production." He laid emphasis on having the bees go into winter quarters strong and with plenty of stores, so as to have plenty of bees early enough to get the honey-flow when it comes. A large number of us have plenty of bees when the main flow is over and when the bees are not needed.

F. J. Stritmatter spoke on "House Apiaries." This subject aroused considerable interest, as it is quite novel to Pennsylvania people. One of his buildings is a 3-story building 20x30 feet. This contains 86 colonies in hives built solid to the floor of the room. His experience tells him that he has solved to a great extent the wintering and the swarming problems by means of the house apiary.

"Soil Fertility and Honey Production" was the subject of the president's annual address. Dr. Surface told the beekeepers to increase the fertility of their soil by sowing the legumes: clover, alfalfa, vetches, etc., and by so doing reap another crop, that of the sweet nectar which these secrete.

Dr. H. A. Surface, of Harrisburg, was re-elected president; H. C. Klinger, of Liverpool, secretary-treasurer; Hon. E. A. Weimer, of Lebanon, 1st vice-president; Mrs. Dr. L. M. Weaver, of Philadelphia, 2d vice-president; and R. L. Coons, of Coudersport, 3d vice-president.

H. C. Klinger, *Sec.*



In a Small Way.

Ma'am—"Well, James, I'm going to start bee-keeping."

James—"Bees is nasty, troublesome thingst ma'am."

Ma'am—"Oh, but I shall start in a very small way—just a pair to begin with."—*London Sketch.*

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

How to Tell Pure Homey

How do you tell whether honey is pure? NEW JERSEY.

ANSWER.—I don't know any way by which a mere beekeeper like you and me can tell for certain whether honey is adulterated. Usually, however, if there is much adulteration in the case, a pretty good guess can be made by the taste.—[See article by Alin Caillas in March number.—EDITOR]

A Beginner's Questions

1. Is it necessary for a beginner to use a drone and queen trap?
2. Could one keep several different races of bees in the same apiary?
3. Would you recommend the division-board feeders for beginners?
4. What months do bees generally swarm?
5. What month can honey be harvested?
6. I have a colony of bees which I captured from a bee tree. I have them in the cellar. They have 18 pounds of capped honey. They seem restless, and bees come out of the hives and don't return. The temperature is 30 degrees where they are. What is the cause of this? NEW YORK.

ANSWERS.—1. No; and the advanced beekeeper may get along very well without

2. Unless it be for the sake of experimenting with a different race, it is better not to try to keep more than one kind. Even with only one, you may find it beyond you to keep them pure; for they will mix with bees as far as a mile or two away and farther.

3. They are excellent where you do not care to feed a larger amount than they contain.

4. In the State of New York June is the greatest swarming month, with a few swarms in May, some in July, and a few still later.

5. Comb honey is generally ready to be harvested whenever it is fully sealed over. That probably means in your locality that most of it will be taken off in July and August, and still later if there is a late flow. The same rule applies to extracted honey, only some of the best beekeepers prefer to leave all on the hives until the close of the season.

6. It would be better if they were warmer. Still, there are always some bees dying in winter.

Keeping Honey Liquid

1. My honey granulates very soon after it is extracted and put in glass jars for retail trade. I always melt it before taking it to grocery stores, but in a few weeks it granulates again and the store-keeper has the impression it has spoiled. I put labels on telling them what to do with it, but it does no good. The same store-keepers will buy honey put up by some company while it remains liquid for a year. This honey has a serial number on it. How can this honey remain liquid, have a serial number, and still answer the pure food law? I read in the Bee Journal that honey that granulates shows it is pure.
2. Where can I buy 5-ounce bottles for extracted honey? NEW JERSEY.

ANSWERS.—1. There is quite a difference in honey as to the matter of candying; some of it begins to candy about as soon as it is extracted, while a very few sorts may remain liquid a year or more. The honey in question may have been of the latter sort. It is also possible that it would not come up to the requirements of the pure-food law, serial or no serial. Persistence on your part in trying to educate the public as to the purity of candied honey will probably win in the long run. Indeed it might not be a bad thing for you to furnish it in the candied state, and let them learn to liquefy it.

3. Likely through any of the large dealers in beesupplies.

Good Crop in Colorado

I started last season with 13 colonies of bees. I secured 1180 pounds of extracted honey, and have 20 colonies now. I have my bees packed in straw with about 60 pounds of honey left to each.
1 Is it best to keep the heavy snow shoveled away from the entrance of the hives?
2 Will bees that are queenless go through the winter when they have plenty of stores? COLORADO.

ANSWERS.—1. Sometimes it is better to have them covered up with snow, and sometimes not. Sometimes when covered up they are too warm, and it may happen that slushy snow may fill the entrances and freeze there. On the whole it may be best to keep the entrances shoveled open.

2. They may; but not so well as with a queen.

Laying Queens and Virgins—Rearing Queens

1. When bees are in trees I have read that the best plan is to take the log home, prepare a small colony or a nucleus in a modern hive, place the hive beside the log, put a Porter bee-escape over the log, and as fast as the bees come out they will go into the new hive. But I don't know whether to use a virgin queen or a laying queen. Which is better?
2 Is it a good plan to rear queens in the same hive where there is a laying queen and have them fertilized in an upper story by putting a queen-excluder between?
3. Wouldn't I get more honey by having two laying queens in a hive; first a hive-body then a super, then a honey-board; next a hive-body with the second queen, lastly a cover. Would the two laying queens fight through the honey-board?
4. How can I rear and improve my queens? How are the best queens reared? For example, I have a hive of bees with a laying queen. I put in cell-cups, and in them a worker larva from the same hive. When the new queen-cell hatches it is a virgin When she takes her wedding flight she meets a drone of the same hive, a drone that comes from one of the eggs that her mother layed; thus being her brother.
5. Which is the best way to rear good queens? NEW HAMPSHIRE.

ANSWERS—1. The bees will feel more at home with a laying queen than with a virgin. Instead of setting the new hive beside the log hive, it might be better to set it directly on top.

2 With me the plan has generally been a failure.

3. The queens could not very well fight, but I don't think you would gain by the plan. One of the queens is likely to disappear before long.

4 If virgins mate with drones from the same mother, they will deteriorate; but that is not likely to happen, for the virgins may meet drones from other hives in your apiary, or from hives a mile or so away.

5. The first point in rearing best queens is to keep record of the work of each colony, and then to breed queens from the best. There are different methods of rearing queens, and it would be beyond the compass of this department to go into full particulars. Such particulars were, however, given as to the plan I like best and use, in a former number of this journal, and also in "Fifty Years Among the Bees," very fully.

Feeding Granulated Honey—Prevention of Swarming

1. I have a lot of frames full of honey nicely capped and in a cool room where the temperature goes down to zero. I presume this honey is granulated. I intend to take those frames in the spring and divide them among my colonies as feed. Is this *frozen* honey good; can the bees *thaw* that out or will they carry the sugar out instead of using it for brood-rearing?
2. If you melt 10 frames of comb will you have wax enough to produce 10 frames of foundation? In producing extracted honey is it always best to give foundation instead of dry combs in the brood-nest? This would be an expensive outlay to buy every year new foundation and not have much income from the surplus old combs.
3. I have read about concentrating the brood-nest to five frames with inch starters in producing comb honey. Wouldn't it work to put a deep super with 10 shallow extracting frames under the comb-honey supers, excluder between, and shake the bees into that super with shallow frames, and at the close of the honey-flow add another shallow super? This would make a divisible hive. Will it work?
4. I always make my bees strong in spring, then I add a super with shallow extracting frames, no excluder. When the white clover is in full bloom I shake all my bees into an empty new hive with five frames and inch starters, but last year I had almost as many drones as workers. They also filled the vacancy between the 5-inch starters and the body with natural combs, as I had only one division-board next to the comb. It was a very disagreeable job to cut this wild comb out, still I had an average of five supers of comb honey in each hive.
5. I also have read in "Fifty Years Among the Bees" the plan to produce comb honey by manipulating two hive bodies just before the honey flow. Put excluders between the two brood-nests, and in 10 days put the queenless part down, cut queen-cells out, and give them their queen. I have tried this plan, but in a short time the bees were ready to swarm again. WISCONSIN.

ANSWERS.—1. The honey is entirely wholesome, but very likely the bees will waste a good deal of it by carrying out the undissolved granules. You can do something to prevent that if you will go to the trouble of spraying the combs with warm water by means of an atomizer, first uncapping any cells of honey that may be sealed. When the combs are cleaned off dry by the bees, they may be sprayed again. Don't begin this until the bees are flying freely.

2. Ten Langstroth brood-combs will produce from 1⅛ to 2⅛ pounds of wax. Ten full sheets of medium brood foundation will weigh a little less than 1½ pounds.

3. With shallow frames in a deep super there is danger that you would have all sorts of combs built to the bottom-bars in the empty space. Also there would be too much danger that they would not build in the super given after the flow was over.

4. Yes, you may expect too much drone-comb with nothing more than inch starters.

5. With me they are not ready to swarm again in a short time, at least rarely. But you made an unwarranted variation from the plan given in the book. You say "just before the honey-flow to put excluder between the two," etc. Please look again and see if you will find in the book anything about "just before the honey-flow." Instead of that I don't operate until queen-cells are started; and not then if I can stop them

from going farther. The first time queen cells are found started they are destroyed, and then every 10 days after that they are destroyed again, so long as nothing but eggs are found or very small larvæ, even if that goes on the whole season; but when big grubs or sealed cells are found, then it is time to operate.

Miscellaneous Questions

1. I have a colony of bees that was running out at the entrance and seemed to be greatly excited on March 27. Looking on the ground I found the queen dead before the hive. The next day I opened the hive, and to my surprise found four frames partly filled with brood and some queen-cells. What was the cause of the queen dying?

2. What would be the result if young queens were to hatch out of these cells and no drones were present in the hive or in other hives at this time of the year, April?

3. What should be done in such a case?

4. When is the best time to transfer bees from box hives into frame hives?

5. Is it practical to paint the covers of the double telescopic metal roof?

6. Can bees be given too much shade in early spring?

7. Should I put swarms into hives with frames with full sheets of foundation or one inch starters?

8. What is the best race of bees for this country, this being about the 38th degree of latitude?

9. When is the best time to requeen to improve stock?

10. Is the smoking plan the best method of introduction! KENTUCKY.

ANSWERS.—1. I don't know. If you had opened the hive not long before, it is possible you may have accidentally killed her. She may have died of old age. Sometimes bees ball and kill their own queen.

2. They might begin laying without mating, being drone layers; or they might wait and mate later on. In any such case queens would most likely be very poor.

3. A frame of young brood and eggs might be given every 10 days, not allowing queen-cells to mature until warm weather with drones. It might be more profitable to unite with the queenless colony a weak swarm with a good queen, or else to divide the queenless bees among other colonies where they would do the most good.

4. In fruit bloom used to be the favorite time; nowadays it is considered better to wait until the colony swarms, hiving the swarm in a good hive, and then uniting the rest of the bees at the end of 21 days, breaking up the old hive at the same time.

5. I think so.

6. Yes; at that time it is better to have the sun shine on the hive at least part of the day.

7. Better use full sheets. With anything less you are sure to get too much drone comb.

8. You are probably as safe with Italians as any other.

9. Suit your convenience any time when bees are busy gathering.

10. I don't know. Some are very enthusiastic about it, but not many have yet tried it very fully.

What to Do With a Queenless Colony

Doctor! what am I to do? A fine 10-frame hive with plenty of stores and of bees—but *queenless*. I dare not ship a queen from the South, as a cold snap would kill her if a frame of brood from another hive is introduced and a queen is reared; there are no drones for her to mate with. Laying workers may develop at any time. But I do hate to lose that colony. What would *you* do?

Other colonies are breeding finely; new bees flying; abundant supplies of pollen and a little honey from the elms and early maples. Dandelions, *Corydalis aurea*, violets, *Dicentra cucullaria* are already in evidence, and *Erythronium* is shooting out its spotted leaves. Flickers, song sparrows, ground robins and meadow larks, and a few peach blossoms may be seen. The prospect for the year is fine. MISSOURI.

ANSWER.—You are wise in thinking it best not to rear queens too early. Aside from the lack of drones, it is true that queens reared much before the time of swarming, and if drones are present, generally turn out to be so poor that they are often worse than none. All the same, you can give the colony one or two frames of brood from some other colony, with a goodly proportion of eggs and unsealed larvæ. Then within 10 days kill all queen-cells started on this brood, and at the same time give a frame or two of fresh brood every 10 days until conditions are right for rearing a queen, but allowing no young queen to emerge until then, you will do three things: You will keep up the courage of the colony, you will help keep up its strength, and you will keep it from having laying workers. And if the brood you give them be mostly eggs and very young brood it will not cost such a great deal to the colonies from which it was taken.

After all, that's hardly answering your question, for you said, "What would *you* do?" In the preceding I've said what you can do. It isn't likely I'd do that. I would harden my heart and break up that queenless colony. At least I'd unite it so there would be one less colony in the apiary. If there was another colony quite weak, but with a good queen, I'd put a sheet of newspaper over the queenless colony, and set the weak colony over it. Then the bees would gnaw a hole through the paper and unite peaceably. If I hadn't a very weak colony, I'd divide combs with adhering bees among two or more colonies, taking such colonies as most needed help. In this way, although I would have one less colony, I would be likely to have more *bees*, and by the middle of the summer likely more colonies.

Swarms—Getting Colony from a Tree

1. Will a new swarm gather any surplus honey the first season?

2. Which is the best way to get a swarm of bees out of a large tree; they are about 40 feet from the ground?

3. When is the best time? MISSOURI.

ANSWERS.—1. Yes; as a general rule the swarm is the one to rely upon for a crop, it being put on the old stand after removing the old hive to a new stand.

2. That depends. Perhaps oftener than any other way it is the plain job of cutting down the tree and then chopping open the part containing the bees. Sometimes it may be felled against another tree or trees in such a way as to break its fall and yet allow it to come to the ground. Sometimes the hollow may be in a branch of the tree which may be cut off and lowered by a rope. Even when the hollow is in the main trunk, and other trees near, a rope may be used to ease the fall.

3. If you want to save the bees, a good time is not later than fruit bloom. If you want merely to get the honey, take fall, at the first close of the honey flow.

Dividing

1. When should dividing be done?

2. How is it done?

3. What are the prospects of a crop after the operation?

4. Should feeding be done after fruit bloom in order to ensure a good crop?

5. Will feeding every other day be sufficient? NEW YORK.

ANSWERS.—1. That depends upon circumstances; not before a colony has built up trong; only when there is a flow of honey; and never in such a way or so late in the season as to risk having a colony too weak for winter. The subject of artificial increase is a big one; you may be interested in finding it treated pretty fully in "Fifty Years Among the Bees."

2. One way is to put the brood of a colony into an upper story over an excluder, leaving the queen below; then 10 days later to set the upper story on a new stand, giving it a queen or a queen-cell if it has not started queen-cells. A number of other ways may be used.

3. That depends upon the plan used. Generally the new colony cannot be depended upon for much of a crop.

4. No, unless there is so long a dearth after fruit bloom that brood-rearing ceases.

5. In case of a dearth every alternate day will do, although every day is a little better. Like enough there is no need for anything of the kind in our locality, provided there are plenty of stores in the hive to ensure against starving.

Transferring

I have a "bee-gum" that has about 150 pounds of honey in it. How can I transfer the bees to a modern hive? I wish to take the honey out of the "gum." I also wish to divide the bees into five colonies. Shall I purchase Italian queens? This colony is uncommonly large What time of the year is best to take them out of the "gum" and the best time to divide? WYOMING.

ANSWER.—You can transfer during fruit bloom in the usual way, but nowadays it is generally preferred to let the bees swarm first. As you want to do some increasing, here is perhaps what will suit you; Let the bees alone until they swarm, and set the swarm on a new stand (of course you will have the swarm hived in a movable-comb hive), leaving the old hive undisturbed on the old stand. As the colony is a very strong one, it is almost certain to send out a second swarm in a week or so, and this swarm you will also set on a new stand. It is possible that a third, and even a fourth, swarm may issue. At any rate, at the end of 21 days from the time the first swarm issued break up the old gum, save out the honey, and transfer the best of the worker combs into frames in a new hive. If very weak from too much swarming, it may be best to add the bees to the last swarm and melt up the combs.

Spraying During Bloom

I am a beekeeper in a small way, having 64 colonies; but I am going to have a hard struggle, as people spray here when the bloom is on as well as when there is none. Spraying fruit trees is the thing, but not when the bloom is on. It doesn't do any good to talk to people. If we haven't any law in this State, why don't the beekeepers go together and get a bill before our Legislature against this spraying when the bloom is on. That is all that will ever stop it.

I produced 2700 pounds of fine comb honey last year, and have it all sold. ILLINOIS.

ANSWER. You are quite right about the importance of a law against spraying, but I am sorry to say there is no law upon the subject in Illinois. A few years ago quite an effort was made in that direction, and a bill introduced in the Legislature, but it was buried in committee. The trouble is that the chairman of the committee to which such bills are referred has always been a fruit-man rather than a bee-man. I wrote to the chairman of the committee at that time and he replied that fruit-men all knew that spraying fruit trees when in bloom was against their own interests, and so there was no law needed. Of course that looks reasonable; it would seem hardly necessary to have a law against a man building a bonfire under a live apple tree. All the same there are ignorant orchardists, as in your neighborhood. I think that the real milk in the cocoanut is that those fruit men, who are none to conscientious, although they know it to be against their interests to spray during bloom, want to spray as near that time as possible, and don't want the risk of butting up against the law if they should happen to spray at wrong time.

I am afraid there isn't much chance of a law until there is some change in the chairman of that committee or in the way our laws are made; and the only thing you can do is to try to enlighten the neighboring fruit growers. If you send to the A. I. Root Co., Medina, Ohio, you can obtain leaflets on the subject.

REPORTS AND EXPERIENCES

No Loss

My bees wintered well. Did not lose any.
A. J. WALDSCHMIDT.
Washington, Iowa, April, 6.

Wintered Well

My 80 colonies of bees have come through the winter good and strong without any loss.
Milo, Iowa, April 8. B. A. MANLEY.

No Clover to Speak of

No white clover here except on lowlands and hollows between hills. It is all killed by drouth on hilly or rolling ground. Our last white clover crop was in 1908. We need rain. Had but one rain since last fall. Prospects are good for another dry year. If we had plenty of rain there would be a good chance for a fall flow. Corn, heartsease and Spanish-needles are about one-half of our total honey crop, and of late years, *all*.
A. B. TACKABERRY.
Cantril, Iowa, April 4.

Increase the Sale of Honey

It is not so much the big crops of honey that ruin the price, as dumping it on the market at once. What we need is to develop our own trade at home. I will venture to say that twice and more honey could be sold at a good price if every one would carefully work his home trade.

I have for 30 years produced from 3000 to 6000 pounds of honey, and never shipped any except to the consumer. I know what I produce is very small indeed to what some others do, but for all that there is too much honey shipped that ought to be sold at home. I am never worried if I have a big lot left on hand in January, as I sell nearly the whole year through the grocery stores. We sell bulk comb in friction top pails 5 and 10 pounds, and quart clear glass jars. I am glad to say we are getting better prices than ever before. I never have any trouble to sell to the stores.

Every pound that is sold is labeled and warranted to give satisfaction or money back. Sometimes a jar of honey or a pail of comb will candy. In that case we take it back. Our honey at this time of year is all brought to 150 degrees and sealed hot. It never candies put up that way. The comb, of course, cannot be sealed hot. But the honey is brought to about that, and cooled before putting on the comb in the pails.

Did any of you fellows who keep bees in the cellar ever try a small cloth with a little carbolic acid on it to keep the bees in the hive when taken out of the cellar? If you have trouble that way try it. It works fine for me. Just lay the cloth in front of the opening.
IRVING E. LONG.
Marceline, Mo.

Shall We Go Back to Comb Honey?

I have tried the production of both comb and extracted honey in my years of California and Utah experience. There are localities in southern California where a man would soon starve should he attempt to produce comb honey exclusively. These same localities have produced fair yields of extracted honey during the intermittent seasons of the past 20 years.

Many ranges have changed so greatly in honey-producing flora that an appetizing article of comb honey cannot be produced in an average season. Some of my ranges, that 15 or even 10 years ago were almost exclusively sage or wild buckwheat, are now so interwoven with different kinds of flowers and weeds, both annuals and perennials, as to give the whole crop a decided "off tinge." If sections were left on long enough to complete, many would have two or three shades of honey in them with as many different flavors. The orange, which some of us look upon as our most dependable crop, blooms at a time when it is very difficult to get honey stored in sections. Several conditions are responsible for this, among which cool foggy days. Bees are not inclined to get away from drawn combs or to draw out foundation in any amount. In many cases a colony will fill six or seven drawn combs three-fourths full of nectar and hardly touch a sheet of foundation directly in the center of the super.

With extracting, it is surprising how a small colony will sometimes store surplus during a heavy honey flow.

Some sections of our State will produce good crops of comb honey. The Owens River Valley, in Inyo county, lying east of the high mountain range in the central part of the State, has always been noted for its comb honey, and until recently an extractor was almost unknown among the beekeepers there.

The Sacramento Valley, lying north of San Francisco Bay, also produces comb honey to a considerable extent.

The great Imperial Valley, which has gone very extensively into the business within the last 10 years, produces exclusively extracted honey, having sent out some 30 carloads the past season.

In Utah one can make a success of either kind if he understands his business.

But to change over an apiary already fitted for extracting and attempt to produce comb, simply because it looks more profitable, is in my opinion a big mistake.

The orange bloom came out almost one month earlier than usual this year, yielding finely for three or four days, then it turned cool and bees have been doing very little since. Prospects are, I think, good for a fair crop of honey.

We needed at least 2 inches more rain to asssure us a full crop, and we got only one-half inch.
L. L. ANDREWS.
Corona, Calif., March 24.

Long-Idea Hives and Other Ideas

We see on page 90 of the American Bee Journal for March, mention is made of the "DeeLayens" or "long-idea hive being preferred on account of its simplicity. Is there no food for reflection here for our beekeeping brethren? What is more desirable than simplicity in equipment in handling bees? Our old friend "Novice" thought so well of it that he named his hive "The Simplicity," and I wish to say in passing that "Novice" was, and is, a very interesting writer in his chosen field.

Why should we require our colonies to store their surplus in a hive which, compared to the height of a bee, is about what the Washington Monument would be to the height of a man? Do we go on the supposition that the bee is a machine of inexhaustible energy? When one arrives panting and weary from the fields, does he realize the prospect of a climb to the top of three Langstroth hive bodies before it can deposit its burden? If men were required to lay up stores for the winter under such conditions how long do you think it would be before they would revolt? We have the long-idea hive all right, but it is standing on end.

When one reads about some apiarist going, through his hives like a cyclone through a lumber yard, lifting off supers, killing, introducing or clipping queens and cutting out queen-cells, etc., and always lifting and putting back supers every time he wishes to see the brood-nest, one cannot help thinking he is the busiest bee of the whole. But of course for those who shake their bees to give them energy, these manipulations would approach the ideal. The San Francisco earthquake injected quite a bit of energy into the people of that unfortunate city, but no one will claim that the earthquake was a good thing.

Producers of honey appear to have given too much time and energy to the producing end of the game. They are not suffering so moch from over-production as under, or poor distribution. The mail-order houses want all the way from $1.58 to $2 00 a gallon for extracted honey, which puts it out of reach of the ordinary consumer.

In many towns and villages the grocers do not handle the product at all. It is all wrong. It is wrong to bend every energy to production for the fancy trade. Why is it that every amateur aspires to produce a fine grade of section-box comb honey, the hardest stunt of all to pull off with a profit?

There is undoubtedly an outlet for an unlimited amount of honey in the United States, if it can be sold at prices that the people can pay. The producers must devise means to take it out of the luxury class and bring it down to a level with the people, if they wish to take advantage of this capacity for consumption.

We should carry on a campaign of education and advertisement. The National association should have a press agent *par excellence*, and every beekeeper should elect himself a propagandist to write in the farm papers, or any other medium available concerning the purity, wholesomeness and cheapness of honey as an article of diet, and its superiorty over any other sweet whatever for children and invalids.
H. BASSETT TURRELL.
Medora, Ind., March 13.

Statement of Ownership, Management, Circulation, Etc.,

of the American Bee Journal, published monthly at Hamilton, Illinois, required by the Act of Aug. 24, 1912.

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C. P. Dadant—Editor.

Sworn to and subscribed before me this 23d day of March, 1914.

[SEAL.] H. M. CUERDEN,
Notary Public.

My Commission expires March 25, 1915.

QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate. Purest of the pure

GREY CAUCASIANS

Bred strictly in the light of **Mendel's Laws of Heredity**; no guess, but positive results. The pioneer **scientific** queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special **isolated mating station** on bald open prairie, not a tree within miles—no chance for gypsy drones.

CHAS. W. QUINN
Box 389 - Beaumont, Texas

Miller's Strain Italian Queens

By **return** mail after June 5th to 10th or money refunded. Bred from best **RED CLOVER** strains in U. S. In full colonies, from my **SUPERIOR BREEDERS,** northern bred; for business; long tongued; leather color or three-banded; gentle; winter well; hustlers; not inclined to swarm; roll honey in. Untested, 1, $1.00; 6, $5.00; 12, $9.00. Select untested, one, $1.25; 6, $6.00; 12, $11.00. A specialist of 17 years' experience. Safe arrival and satisfaction guaranteed.

I. F. MILLER, - BROOKVILLE, PA.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Queens, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

For Sale—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

Phelps' Golden Italian Queens will please you.

Bees and Queens from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

Golden all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
2Atf Robert Inghram, Sycamore, Pa.

British Golden Queens, Carniolans, leather-colored Italians, tested, $1 50 each, Diseases unknown. William Beck.
Scosthrop Apiary, Bell Busk, via Leeds, Eng.

For Sale—Fine Italian Queens. See my large ad. in this issue.
J. F. Archdekin, Rt. 7, St. Joseph, Mo.

1914 Queens—Moore's strain of leather-colored Italians. In April at 75c. Bees by the pound and Tested queens. Write us for prices on nuclei. Address,
Ogden Bee & Honey Co., Ogden, Utah.

Italian Queens—Bees by lb. Descriptive List free. Apiaries under State inspection. Leaflets, "How to Introduce Queens," 15c. "How to Increase," 15c; both, 25c. 2A1t
E. E. Mott, Glenwood, Mich.

Queens—10 percent discount for orders received before May 1, to be filled in May and June. Tested, $1.00; untested, 75c. Dead ones replaced free. 2A9t
S. Click, Rt. 2, Box 16, Mt. Jackson, Va.

Phelps' Golden Italian Bees are hustlers.

Italian Queens, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or $7.25 per dozen. Safe arrival guaranteed.
W. W. Talley, Queen Breeder,
3Atf Rt. 4, Greenville, Ala.

Ready after April 20. Good Italian Queens. Tested, $1.00; untested, 75c. Satisfaction guaranteed. G. W. Moon,
1904 Adams St., Little Rock, Ark.

Full Colonies of Italian bees $10 Nucleus, $4.00; tested Italian queens, $1.50; untested, $1.00. Stock that gives results.
I. J. Stringham, 105 Park Pl., New York, N.Y.
Apiaries:—Glen Cove, L. I.

California Italian Queens and bees by the pound for June and later delivery. Booked full until June 1st. Circular and price-list free. Write.
J. E. Wing, 155 Schiele Ave., San Jose, Calif.

Northern-reared Queens of Moore's strain of leather-colored three-banded Italians. After June 15, untested, $1.00; 6 for $5.00; 12 for $9.00.
Ramer & Gluen, Harmony, Minn.

Three-Banded and Golden Italian queens. Ready March 1. They have been bred for three points, prolificness, gentleness and honey-gathering qualities. Prices, Select Untested, 75c each; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60. Tested, $1.50; Select Tested, $2.00.
Garden City Apiary Co.,
R. R. 3, Box 86, San Jose, Calif.

Pure Golden Queens, the best that twelve years can produce. Untested, $1.50 each. Select tested, $3.00 each. Breeders, $5.00 to $50. Send for booklet on "Bees and Diseases." Geo. M. Steele,
30 South 40th St., Philadelphia, Penna

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

The Bankston Bees and Queens are as good as the best. Golden, Three-band and Carniolan. Tested, $1.00 each; untested, 75c. Queens ready to ship April 15. Bees, per pound, $1.50. Nuclei, per frame, $1.50. Write us for prices on large lots of queens. Try us and be pleased.
Bankston & Lyon, Box 141, Buffalo, Tex.

Golden and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

Dunn's Golden Italian queens, bred strictly for business that produce a strong race of honey gatherers. March 1 to Oct. 15. One, mated, 75c; 6, $4.25; 12, $8.25; 50, $32. 50; 100, $60. L. J. Dunn, Queen Breeder,
2A9t Box 337 G. R. R. 6, San Jose, Calif.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

For Sale—Moore strain and Golden Italian queens. Untested, $1.00; 6, $5.00; 12, $9.00. Carniolan, Banat and Caucasian queens; Select Untested, $1.25; 6, $6.00; 12, $10. Tested, any kind, $1.50; 6, $8.00. Choice Breeders, $3.00 to $5.00. Circular free.
W. H. Rails, Orange, California.

Quirin's Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G. Quirin,
The Queen Breeder, Bellevue, Ohio.

Queens Bred from Doolittle's best stock. Untested, 60c each; $6.60 per doz; $50 per 100. Same stock of one-year old queens removed from our colonies to prevent swarming, 50c each; $5.40 per doz; $40 per 100. Delivery guaranteed. Nuclei 2-frame, $1.50; 3-frame, $2.00. Add price of above queens wanted. We have a rare bargain of apiary of several hundred colonies of bees for sale on easy terms. Particulars on request.
Spencer Apiaries Co., Nordhoff, Calif.

Famous North Carolina Bred Italian Queens for sale (red clover 3-banders). Honey-gatherers good as the best. Strictly reared from Geo. B. Howe's best breeders; mated with Root's, Moore's, Davis' Select Drones; bees that get the honey. Free from disease. Untested, one, 75c; per doz., $7.50. Select untested, one, $1.00; per doz., $9.00. Tested, one, $1.25. Select tested, $1.50. Extra select tested, $2.00. Breeders, $3.00 and $5.00. H. B. Murray, Liberty, N. C.

Guarateed purely mated three-banded Italian Queens. J. E. Hand's strain. Bred for gentleness, prolificness, honey gathering and long life. State Inspector's certificate. Expect to commence mailing 1914 queens about May 15. Select untested, one, $1.00; 6, $5.00. Tested, one, $1.25; 6, $7.00. Select tested, one, $1 75; 6, $9.00. Breeders, $5.00. After July 1, select untested, one, 75c; 6, $4 00; 12, $7 00, Tested, one, $1.00; 6, $5.00; 12, $9 00. Select tested, one, $1.25; 6, $7.00; 12, $13. Breeders, $4.00. Ten percent discount on 30 days' advance orders on all Queens to be mailed after June 20. Safe delivery in U. S. and Canada. Guaranteed.
J. M. Gingerich, Arthur, Ill.

Three-Banded Italian Queens. Before July 1st, untested, one, $1.00; 6, $5.00; 12, $9.00. Select untested, one, $1.25; 6, $6.25; 12, $11.

After July 1st, untested, one, 75c; 6, $4.00; 12, $7.00, Select untested, one, $1.00; 6, $5.00. 12, $8.50 One-frame nuclei, 75c; 2-frame, $1 50; 3-frame, $2.25. To each nucleus add price of Queen. Our Queens are reared in a locality where there has never been disease, and reared from strong vigorous colonies. The apiary is under most competent supervision. Safe arrival and satisfaction guaranteed.
Horner Queen & Bee Co., Ltd.,
Youngsville, Pa.

HONEY AND BEESWAX

"Null's Famous Melilotus Honey." Sample for stamp. Null Co., Demopolis, Ala

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale— No. 1 white comb, $3.00 per case fancy, $3 25; 24 Danz. sec. to case, and 6 case; to carrier. Wiley A. Latshaw, Carlisle, Ind.

$1000 (one thousand). I will pay the above amount in cash for one pound of honey that is equal to my *Red Ripe* (Harnessed Sunbeams) Honey in digestibility, nutrient, value or flavor. Samples and prices free
C. W. Dayton, Owensmouth, Calif.

Extracted Honey — Best pure Illinois, White Clover and blends with Sweet Clover. Amber Fall and Spanish-needle grades. Also fine Western Water-white and Light Amber Alfalfa. All packed in 5, 10 and 60 lb. cans. Some in barrels. Samples and prices Free. Dadant & Sons, Hamilton, Ill.

SUPPLIES.

Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

Better Hives for Less Money—Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

The A. I. Root Company's Canadian House. Dadant's Foundation. Poultry, Supplies, Seeds. Write for catalog.
The Chas. E. Hopper Co.,
185 Wright Ave., Toronto, Ont.

The National Beekeepers' Association now buy supplies for their members. Send us your order, enclosing the same money you have to pay others, and we will buy them for you on the co-operative plan. If not a member we reserve the right to retain $1.50 from the profits on your first order to pay your membership dues and subscription to the Review one year. Sample copy of the Review free. Address,
National Beekeepers' Ass'n., Northstar, Mich

FOR SALE

For Sale—Empty second-hand cans, two cans to the case; good as new; 25c per case.
C. H. W. Weber,
2146 Central Ave., Cincinnati, Ohio.

For Sale—50 full colonies of pure Italian bees at $6.00 each, in 8-fr. dov. hives with Hoffman frames. Moore queens of 1913 rearing. No disease. F. A. Gray
Redwood Falls, Minn.

For Sale—150 supers 4x5x1⅜; 20 never used; painted complete; without sections. Also 20 8-frame hive bodies, good and cheap. Root's goods. F. H. Otte,
3461 Addison St., Chicago, Ill.

For Sale—19 colonies of Italian bees. All have come through the winter in fine condition except 3. All have 8-frame Hoffman) in good hives with about 36 supers. $65.00 will buy them if taken at once. I intend going to California. M. F. Blake, Mount Morris, Ill.

For Sale—22 1½-story Danzenbaker hives with brood frames and section holders; practically as good as new, $1.50 (½ of price list). 5 1-story, $1.00. Bees were transferred, combs and frames boiled to melt wax. No disease. Alfred Mottaz, Utica, Ill

FOR SALE—240 colonies of bees and everything for running three apiaries for extracted honey. Also 120 acres of land in a good location where raspberry, clover, basswood and fall flowers grow. Write for price.
E. S. Frost, Rt. 8, St. Louis, Mich.

Closing out sale of bees. Have 50 colonies in 8-frame hives, queen-excluding honey boards, queen and drone traps, Porter bee-escapes, Cowan honey extractor, Doolittle solar wax extractor, supers, and all that is necessary to complete a profitable apiary. If interested, write me. 4A2t
S. C. Boyle, Bode, Iowa.

MISCELLANEOUS

ORIGINAL and unique honey advertising post cards (photos). Write Dr. Bonney, Buck Grove, Iowa, for samples.

I GOT 100 pounds of comb honey per colony; my neighbors got none. I'll tell you how for 25c. O. N. Baldwin, Baxter, Kan.

MAKE your own paint without oil at very little cost. Best known for bee-hives, barns, coops, etc. Formula, 15 cents.
I. Holmberg, El Dorado Springs, Mo.

CALIFORNIA'S Golden and 3-banded equal the best. Try them March 1 or later. No culls. Tested, $1.25 to $2.50. Select mated, one, 75c; 12, $8.00; 50, $32; 100, $60.
W. A. Barstow & Co., San Jose, Calif.

THE BEEKEEPERS' REVIEW Clubbing List The Review and American Bee Journal one year $1.50. The Review and Gleanings one year, $1.50. All three for one year only $2.00. Dealers, or those wanting to buy honey, kindly ask for a late number of the Review having a list of 100 producers having honey for sale. Address,
The Beekeepers' Review, Northstar, Mich.

POULTRY

PURE WHITE and Blue Barred Homer Pigeons. Good breeders and mated pairs.
J. W. Hopson, Bedford, Iowa.

SINGLE COMB Brown Leghorns. Champions of the West. Over 300 prizes won. My quarter of a century record is free.
3A3t C. F. Lang, La Crosse, Wis.

FOR SALE—Single Comb Buff Orpington eggs for hatching, pure bloods; $1.00 per 15 or $5.00 per hundred. Satisfaction Guaranteed.
W. H. Payne, Hamilton, Ill.

S. C. W. ORPINGTON eggs, 15 for $3.00; 30 for $5.00. Direct from Kellerstron, progeny of "Peggy," the $10,000 hen. Indian Runner duck eggs, 10c each, white and fawn.
I. F. Miller, Brookville, Pa.

SITUATIONS.

WANTED—Young man of good habits and experienced in handling bees, to work in an apiary. Give age, wages wanted, and references in first letter.
W. D. Wright, Altamont, N. Y.

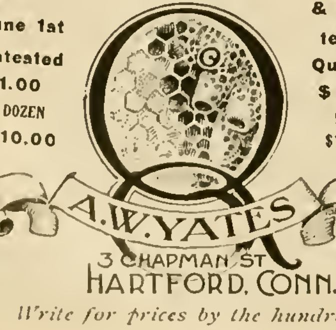
"NUTMEG" ITALIAN QUEENS

Leather-colored, reared by up-to-date methods. Prize winners, red-clover strain.

By return mail.

AFTER June 1st untested $1.00 DOZEN $10.00

April & May tested Queens $2.00 Later $1 50



Write for prices by the hundred

HONEY AND BEESWAX

CHICAGO, April 17.—Honey has sold quite well during the past 30 days, and while stocks are not heavy, it takes some time to work them off, as buyers take only small quantities at this time of the year. There is not much difference in price. Fancy grades of white clover and linden bring from 14@15c per pound. Sweet clover and alfalfa from 1@3 per pound less with the light amber grades ranging from within 1@2c per pound of the sweet clover. Extracted white clover and basswood 8@9c per pound; other white grades from 7@8c per pound; ambers about 1c per ponnd less. Beeswax selling upon arrival at from 33c@35c per pound, according to color and cleanliness.
R. A. BURNETT & CO.

LOS ANGELES, April 20.—The market on honey and wax is purely nominal. A few carloads of light amber honey are available for shipment at about 6c per pound, while beeswax is practically out of the market.
HAMILTON & MENDRRSON.

BOSTON, April 20.—Fancy and No. 1 white comb, 15@16c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c.' BLAKE.-LEE COMPANY.

KANSAS CITY, MO., April 15.—An error of a dollar a case on No. 1 white comb honey was made in our last quotations. Same should have read $2.75 instead of $3.75. The supply of both comb and extracted is not large—demand light. We quote as follows; No. 1 white comb, 24 sections per case, $2.60 to $2.75. No. 2, $2.50. White extracted, per lb., 8c; amber, 7@7½c. Beeswax, No. 1, 30c; No. 2, 25c. C. C. CLEMONS PRODUCE COMPANY.

DENVER, April 7.—Our market is getting fairly cleaned up on comb honey, and by the time the new crop comes on, it looks as though it would be all used up. Jobbing prices are as follows: Strictly No. 1 white, fancy stock, per case, $2.52. Choice, good color and heavy weight, per case, $2.30. No 2, well finished, fair color, per case, $2.25.
THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, *Mgr.*

INDIANAPOLIS, April 17.—Fancy white comb honey is being offered here at 16@17c per pound; amber comb at 14@15c. White clover extracted 9@10c in 5-gallon cans. Much comb is being held here, but at this writing there is very little demand. Extracted is in fair demand. Producers are being paid 32c cash for beeswax or 34c in trade. WALTER S. POUDER.

CINCINNATI, April 18.—The demand for honey is somewhat improved from what it was 30 days ago. The stocks are heavy, and hardly think the prices for next season will be as stiff as last season. We continue to sell our fancy comb honey in the wholesale way at $3.75 a case delivered. Our extracted table honey from 7½@10c a pound; our amber extracted honey from 5½@6½c and 7½c a pound, according to the quality and quantity purchased. For choice bright yellow beeswax we are paying 32c a pound delivered here, and 34c a pound in trade for supplies. THE FRED W. MUTH CO.

NEW YORK, April 20.—We have nothing new to report While there is as yet some demand for fancy and No. 1 white comb honey, it does not count for much, and other grades which were shipped to us late in the season when the demand was pretty well over, are practically unsalable and we have several lots in stock which we would rather not have had sent to us at all. If it had been shipped early we could have disposed of it, but now we have it on our hands and would rather not have received it at all. Extracted honey is very quiet. There is some demand for strictly fancy white clover while other grades are neglected. Prices remain about the same as in our last quotations.
HILDRETH & SEGELKEN.

Untested ITALIAN QUEEN-BEES

OUR STANDARD-BRED

6 Queens for $6.00; 3 for $3.50; 1 for $1.25

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens purely mated, and all right in every respected. Here is what one of those who received our Queens has to say about them.

AMERICAN BEE JOURNAL—
Gentlemen:—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters.
Riddle, Oreg., July 4, 1012. L. W. WELLS.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is $1.25, or with the old American Bee Journal for one year, both for $1.60. Three Queens (without Bee Journal) would be $3.50, or six for $6.00. Full instructions for introducing are sent with each Queen, being printed on the underside of the address card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-bred Queens.

American Bee Journal, Hamilton, Illinois.

Root's Goods in Michigan

Our Specialty — The "Root Quality" Bee Supplies to Michigan Beekeepers Prompt Service in Shipping. We sell at factory prices. Beeswax Wanted. Send for 1914 Catalog showing our Parcel Post Service.

M. H. Hunt & Son, Dept. A, Lansing, Mich.

Queens from Caraway's Prize and Winning Stock

Three-banded Italians ready to mail now! Golden Italians after April 15 Following are my prices:

	After April 15				After May 10				After June 10			
	1	6	12	100	1	6	12	100	1	6	12	100
Untested	$1.00	—	$10.00	$75.00	$ .90	$4.50	$ 9.00	$70.00	.70	$4.00	$ 7.75	—
Tested	1.25	6.00	12.00	—	1.00	5.00	10.00	—				

Select tested from April 1 to Nov. 1, $2.00 each; Breeders, $5.00 each.

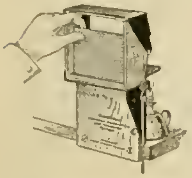
Bees by the pound after May 10th, one lb. for $2.00; 10 lbs. for $18; 100 lbs for $170. Add to these prices the price of the queen or queens. Safe arrival guaranteed within 5 days' journey of Mathis.

My three-banded Italians captured first prize again at Dallas State Fair and the Cotton Palace Fair at Waco. This speaks for itself—none better.

For my stock I secured the best stock obtainable, and when you pay more than my prices you are paying that much extra. I sell nothing only good queens. None better. I positively guarantee my queens to please. No foul brood.

References:—Mathis 1st State Bank and the American Bee Journal.

B. M. CARAWAY, Mathis, Texas



SPEND LESS TIME IN THE SHOP

and more with your bees by using the Rauchfuss Combined Section Press and Foundation Fastener. Guaranteed to give satisfaction or your money back. Price, complete with lamp and treadle, delivered by parcel post, $3.00; cash with order. Write today for illustrated circular to

The Colorado Honey-Producers' Association 1440 Market St., Denver, Colo.

FLAX BOARD

Flax Board is now used by thousands of beekeepers East and West. We have in our office hundreds of unsolicited letters from some of the largest and most progressive beekeepers in the United States, saying that it is just the thing that they have been looking for for many years, and that they are putting in on every hive in their apiary.

The cost of Flax Board is small. It undoubtedly will pay for itself many times every season. You, of course, know that you must protect your bees against the cold in spring if you want to rear brood for the early honey crop. You also know that most of the heat escapes at the top of your hive while the cold comes in at the bottom. With the use of Flax Board, however, you can entirely overcome this.

We will gladly send you a small sample free if you will write for it

One-half inch thick Flax Board to fit top of hive:

Size.	Price.	Weight.
8-frame	$ .10 each	1¼ lbs.
10-frame	.11 "	1½ "

Order a lot. Try them on some of your hives and compare the difference.

MINNESOTA BEE SUPPLY CO. 100 Nicollet Island Minneapolis, Minn.

Manufacturers of Dovetailed Hives, Sections, and Shipping Cases.

Try My Bright ITALIAN QUEENS

This is what one customer writes:—

JOSEPHINE, TEX., June 16, 1913.
MR. M. BATES, Greenville, Ala.

Dear Sir:—I am sending you $9.00 for which please send me 12 Untested Golden Italian Queens. The queens you sent me are fine, and old bee rearers say they are the finest they ever saw. They have surely made a reputation here for you. Several men say they will order queens soon.

A. M. MORRISON.

I have other letters that say the same. Selected Untested, each $1.00; Tested, each $1.50; 2-frame nuclei, each $2.50. I guarantee safe arrival and perfect satisfaction.

M. BATES, Route 4, Greenville, Ala.

UNTESTED QUEENS, 75c each; 7.50 per dozen. Tested, $1.50. Breeders (choice), $5.00. Nuclei, $1.25 per frame; good supply of bees. ½ lb. Bees (Italians) with untested queen, $2.00. One pound with untested queen, $3.00. Full colony in 8-frame hive, with queen, $6.50. Full colony in 10-frame hive, with queen, $7.50. Inquiries from jobbers solicited. Safe arrival and satisfaction guaranteed. Excellent mail and express service. Only twelve hours ride to St. Louis, Mo. Can ship March 20; probably March 10.

Pure Buff Leghorn and Ancona eggs for hatching, $1.00 per setting.

STOVER APIARIES
Mayhew, Mississippi

TAYLOR'S 1914 THREE-BANDED
Italian Queens

Now ready by mail; 26 years' careful breeding for the best honey-gatherers. None better. Prolific, and honey-getters. We fill all orders promptly. Untested, $1.00 each, or $10 a dozen. Tested, $1.25 each, or $12 a dozen. Select tested, $1.50 each, or $15 a dozen. Breeders, the best, $5.00. Send all orders to

J. W. Taylor & Son, Beeville, Bee Co., Tex.

ITALIAN QUEENS NORTHERN BRED

Superior winterers, second to none. My free list explains it all. Untested, $1.00; select tested, $1.50. Bees by the pound or half pound. Plans, "How to Introduce Queens," 15 cents. "How to Increase," 15 cents; both, 25 cents.

E. E. MOTT, Glenwood, Mich.

SAVE YOUR QUEENLESS COLONIES

We can furnish vigorous Tested Queens by **return mail** for $1.00 each. Untested Queens ready April 15, $1.00 for single queen; $9.00 per doz. Three-banded Italians only. No disease, and satisfaction guaranteed.

J. W. K. SHAW & CO.,
Loreauville, Louisiana

QUEENS OF QUALITY

3-band leather color. Sel. unt., 75c each; $8.00 per doz. Orders booked now. Circular free. **J. I. BANKS, Liberty, Tenn.**

BEE-SUPPLIES Send your name for new 1914 catalog out in January. Dept. S. C. C. Clemons Bee Supply Co.,
Kansas City, Missouri.

DOOLITTLE & CLARK

Are now booking orders for Italian Breeding Queens. Prices, $2.50, $5.00, and $10.

MARIETTA, ONONDAGA CO. N. Y.

WANTED

Honey!

Extracted and Comb

Will buy or handle on Commission

Beeswax

Will Pay Highest Pricse.

Yours very truly,

HILDRETH & SEGELKEN

265-267 Greenwich St., New York, N. Y.

3-BAND LONG-TONGUED RED-CLOVER ITALIAN QUEENS

FOR SALE.—My long-tongued Goldens are proving themselves to be the bee to clean Foul Brood. This is why I have such a large trade in Canada. Mr. E. L. Cox, of Jesup, Iowa, introduced 50 of my 3-band queens in Foul-Broody colonies in 1912; and he said the disease was cleaned up where each of those queens was put. They gathered such a large crop of honey in 1912 that he bought 50 more in 1913.

One Untested, 75c; 6, $4.00; 12, $7.50; 25, $13.50; 50, $25.00

Double the above for tested queens. Bees by the pound: One lb., $2.00; 2 lbs., $4.00. One-frame nucleus, $2.00; 2 frame, $3.00; 3-frame, $4.00. To all the above packages add the price of queen. I will begin to send out queens in April.

Positively no checks will be accepted. Send money by P. O. Money Orders. All queens arriving dead will be replaced if cage is returned by return mail.

J. B. ALEXANDER, CATO, ARK.

EXTRACTED HONEY

Just received car New Utah Alfalfa Honey, **8 1-2 cents** a pound f. o. b. Kansas City, Mo. **C. C. CLEMONS BEE-SUPP. CO.**
Department A, Kansas City, Mo.

MARCHANT'S

Three-banded Italian

Island-bred Queens

Bred from Selected Mothers

And mated to isolated drones of a different strain. My aim is quality and not quantity. So if you wish any of these choice priceless mated queens, order now or you may not get them, as I am only going to rear a limited number. Free from disease, and your money back if not satisfied. The A. I Root Co use my queens, which is proof of their quality. No need to write for a lower price. Reference, the American Exchange Bank of this city. Prices, Untested, $1 50; 6 for $6.00; 12 for $10 In lots of 25 or more, 75c each. Select Tested, $3.00; Breeders, $5.00 and $10.

A. B. MARCHANT

Apalachicola, - Florida

MAKE MORE MONEY FROM BEES

Blanke's Bee-Book Free

JOHNNIE-ON-THE-SPOT

DELIVERIES

When you order Bee Goods, you want them "now"—we are in the very heart of the BeeSection—no city with so good package car service—largest stock west of the Mississippi. Whenever possible, orders shipped same day as received—more carefully packed than ordinary.

Blanke's Bee-book Free.—a catalog filled with helpful tips for either beginner or old timer. Write today before you need supplies.

Department 1

Blanke Mfg. & Supply Co.

St. Louis, Missouri

ITALIAN QUEENS

Try Murry's Strain of 3-Banded Italian Queens

Best stock obtainable at any price. 18 years' experience as a queen-breeder. Satisfaction guaranteed or money refunded. 550 nuclei, besides 11 apiaries to draw from. Write for booklet, free. Tested queens in March. Untested in April.

Prices before May 10th:

Untested, 75 cts. straight; Tested, $1.00 each, $90.00 per 100.

After May 10th:

Untested, one for 70 cts.; 5 for $4.00; 100 for $65.00. Tested, one for $1.00; 6 for $5.00; 100 for $80.00. Select Tested, $1.50. Breeders, $5 00.

Bees by the pound; One pound, $2.00; 10 pounds, $18 50; 100 pounds, $180.00.

Better let me book your orders now, for bees or queens in quantities. No disease.

H. D. MURRY, Mathis, Texas

Buy Carniolans in Carniola

Pure Carniolan Alpine Bees

Write in English for Booklet and pricelist. Awarded 60 Honors

Johann Strgar, Wittnach

P. O. Wocheiner-Feistritz

Upper - Carniola (Krain), Austria

Q-U-E-E-N-S

The Old Reliable 3-Band Stock

My queens are reared from imported stock which makes a beautiful bee. They are fine honey-gatherers, and very gentle. Try my queens. Send me your order, and if not satisfied will return your money. Safe arrival guaranteed. Untested Italian, 1, 75c; 6 $4.25; 12, $8.00.

N. FOREHAND, R. F. D. 2, Brewton, Ala.

QUEENS Pure leather-colored Italians bred in isolated location; mated to drones of a heavy storing strain; cannot be beat for comb honey; cap white; enter supers readily, with little inclination to swarm.

Queens are reared under best possible conditions. Will begin mailing about June 15th. Get your orders in early, as the greatest rush is always at the opening of the season. Orders promptly filled. Safe delivery and satisfaction guaranteed. Prices: One, 85c; 6 for $4.50; per doz., $8.00. No foulbrood. Send for circular.

D. G. LITTLE, HARTLEY, IOWA

ARCHDEKIN'S FINE ITALIAN QUEENS

Three-banded. Bred for persistent profitable production of honey. Prolific, hardy, gentle. The bee for pleasure or profit. One customer says, "Your queen soon had her 10 frames running over with bees that are hustlers. No disease. Satisfaction guaranteed. Orders filled promptly. Ready May 20.

Untested, $1.00 each; 6 for 5.50; doz., $10.
Select tested, $2 each.

J. F. Archdekin, R. R. 7, St. Joseph, Mo.

Three-Band Italian Queens For 1914

I will again have for sale, after April 1st, young queens reared from my best Leather-Colored Breeders. You will make sure of improving your stock and securing a crop of honey if you introduce some of these queens. The Leather-Colored Italians are recommended and used by the largest and most progressive bee-men of today.

Untested, $1.00 each; $9.00 per doz., $75 per hundred. Select Tested, $1.50 each.

C. S. ENGLE, Beeville, Bee Co., Texas

LARGEST, BEST

and most complete line of Bee and Poultry Supplies ever seen in Illinois at the lowest living prices. Satisfaction guaranteed or money refunded. Established in 1899 Send for our new catalog. Let us hear from you.

H. S. DUBY & SON, St. Anne, Ill.

FOR SALE

Fine Three-banded Southern

QUEENS

Untested, $1.00; tested, $2 00. My best, $3.00. My bees are gentle, prolific, and fine hustlers. Give me a trial order and be convinced.

J. L. LEATH, - - - Corinth, Miss

ITALIAN BEES

Choice Home-bred Queens Reared In strong colonies.

PRICES FOR MAY

Untested Queen, ..1.25
One Tested Queen....$1.85
" Select Tested 2.40
" Breeder............3.60
" Comb Nucleus—no Queen............$1.50

Safe arrival guaranteed.

For description of each grade of queens send for FREE catalog.

J. L. STRONG,
Clarinda, - - Iowa

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL — Breeding. — Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-Page Catalog

Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

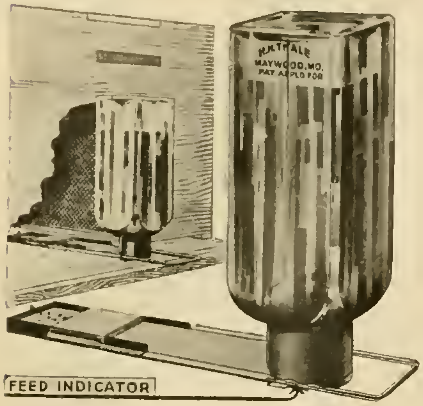
New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

C. H. W. WEBER & CO.

CINCINNATI, 2146 Central Avenue, OHIO

THALE'S REGULATIVE VACUUM BEE-FEEDER



pleases everywhere. Not a dissatisfied customer. Let me double your honey crop by stimulative feeding; most practical method known. Send 55c in stamps today for sample feeder.

New Ulm, Tex., March 26, 1914.
H. H. Thale, Maywood, Mo.—
Dear Sir:—I rec'd the feeders. I tell you it is the best feeder I have ever seen so far, and the best that's out. I could have sold mine directly to a beekeeper, but I gave him your name and address and also the price list of your feeders. He said he would surely have some feeders of your kind.
I am, yours truly, Alex A. Kantz,
Breeder of choice Italian queens.

Mesilla Park, N. Mex., April 4, 1914.
H. H. Thale, Maywood, Mo.—
Dear Sir:—Please find P. O. Money Order in settlement for feeders I rec'd on 10 Days' Free Trial.
They feed well.
They have made the queens of the colonies that I fed start laying.
Yours truy,
John Robbins

Poultney, Vt., March 31, 1914.
Harry H. Thale, Maywood, Mo.—*Dear Sir:*—Please find P. O. Money Order for $10.80 to fill my order for 36 Vacuum Feeders with 36 bottles for the feeders, and ship same by freight to Poultney, Rutland Co., Vt., and oblige. The sample feeder works O. K. If you can forward them at earliest convenience it will be appreciated. Bees are quite short of stores after a long cold winter in Vt. Lost 4 out of 41; so have 37. I have an idea with 37 Vacuum Feeders and a barrel of sugar (350 lbs.) **they will make good.**
Yours respectfully, Thos. Canney.

TERMS, CASH WITH ORDER

Sample feeder with two bottles complete, postpaid	**$ .55**	**50 feeders with one bottle for each feeder -**	**15.00**
10 feeders with one bottle for each feeder -	**3.00**	**Extra bottles with cork valve each - -**	**.10**
25 " " " " " " -	**7.50**		

H. H. THALE, Inventor and Manufacturer **Box A 25, Maywood, Missouri**

Eastern buyers send orders to Earl M. Nichols, Lyonsville, Mass., and B. H. Masters, Edison, Ohio, and Harry W. Martin, New Holland, Pa. Western buyers send orders to D. B. Hersperger, Ordway, Colo.

CAUCASIANS

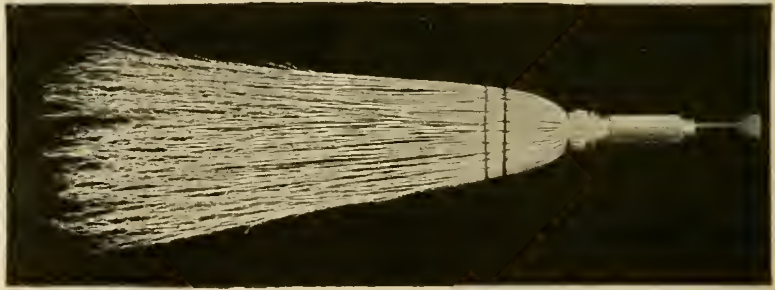
The only and original importer and breeder of Grey Caucasian Bees and Queens direct from the **Caucasus Mountains.** The best Bee ever introduced into the Occident. My apiaries are in the same latitude, therefore conserving their hardiness. Even up your apiary with my Queens, and have all colonies alike. All progeny of my Caucasians are beautiful white comb builders. Explanatory introducing card and prices for a postal.

NUCLEI

My **Jumbo** nuclei will build to rousing colonies the same season, and the price will please as well.

HERE YOU ARE

The handiest tool in the yard. Combined Hive Tool and Bee Brush. Once used always used. Sent by mail, postpaid.



THIS LITTLE NAPPY

Meets your needs for a Honey Dish, being a spherical bottom it just fits the spoon—the last drop can be dipped up—holds just enough—nothing wasted—sent by mail, postpaid.

ANT DOPE

Are you troubled with Ants? My Ant Dope is guaranteed to rid your apiary or home of ants. One of the greatest inventions for the apiarist Full directions go with each order.
Send your name on a card and get prices.
(Established in 1878)

A. D. D. WOOD,
Box 61, Lansing, Mich.

MARSHFIELD GOODS

BEE-KEEPERS :—

We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**

Our Catalog is free for the asking.

Marshfield Mfg. Co., **Marshfield, Wis.**

Beekeepers' Supplies and Fruit Packages

We manufacture the famous Sheboygan Hive, which always gives absolute satisfaction. Our perfect sections, made from selected white basswood, are recognized as the best on the market.

Catalog now ready for distribution. Write for copy.

SHEBOYGAN FRUIT BOX COMPANY, **Sheboygan, Wisconsin**

Dittmer's Foundation

Is the **Comb Foundation** made to **suit the Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

Ask for more information; also prices and **FULL DISCOUNT** on all Bee-Supplies.

Gus Dittmer Company

Augusta, Wisconsin

PAGE-KENKEL MFG. CO.

Manufacturers

OF THE

"NONE BETTER"

BEE-KEEPERS' SUPPLIES

Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping-Cases. Brood-Frames. Separators, etc.

We invite your correspondence.

Guarantee—All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

Page-Kenkel Manufacturing Co.,

New London, Wis.

FOR THE BEST Early QUEENS

Send me your address for Italians and Carniolans. I BEGIN mailing Queens early in March. Untested, 75 cts. each. Tested, $1.25 each. Circular free.

Grant Anderson, **San Benito, Texas**

PHARR WANTS YOUR ORDERS FOR QUEENS

Goldens and 3-Banded Italians

For twelve years we have asked for your orders and we have gotten all we could fill and sometimes more. But we have ever tried to serve you right, and will guarantee similar treatment in the future. Prices of Untested, $1.00; Tested, $1.50; Breeders, 3.00 to $5.00. Write for prices in large quantities.

2-frame Nuclei, queenless,	$2.25	All F. O. B. Berclair.
3 " " "	3.25	
10 " colonies with queen	8.00	

Orders booked now—delivery last of May or June

John W. Pharr, Berclair, Texas

CARNIOLAN QUEENS

Carniolans are excellent winterers, build up rapidly in the spring, are very gentle, very prolific, cap their combs very white, enter supers readily, and keep their colonies strong at all times. Write for our **free** paper, "Superiority of the Carniolan Bee," explaining more fully, giving briefly best systems of management. Untested queens, $1.00 each; doz., $9.00. Full colony with tested queen, 8-fr. dove. or Danz. 10-fr., $10, in May.

ALBERT G. HANN, Clinton, New Jersey

Carniolan Queen-Breeder.

MUTH-CINCINNATI

"By getting Bee Supplies in carlots and selling them on a close margin, I can name you Factory Prices right here in Cincinnati. I personally supervise all correspondence and the filling of all orders."

—FRED W. MUTH.

Muth's Ideal Bee Veil (illustrated herewith) of light weight indestructible wire and strong cambric; postpaid, 75c; with other goods, 70c.

Send for Our New Catalog

Just off the press; complete information and prices about Bee Supplies.

P. S. Ship us your Old Combs and Cappings, and let us render them for you. Our process extracts every particle of wax from the slumgum. This means money for you. Write for particulars.

THE FRED W. MUTH CO.,

"The Busy Bee Men"

204 Walnut Street, Cincinnati, Ohio

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

WE MAKE IT GOOD

THE BEES MAKE IT FAMOUS

The Reputation of

DADANT'S FOUNDATION

Has been built on its merit

It is a Favorite with Beekeepers

BECAUSE

It is so well liked by the BEES

Whether it's a pound or whether it's a ton, every sheet is PERFECT.

Satisfaction Guaranteed in Every Way

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HAMILTON, ILLINOIS.

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AMERICAN BEE JOURNAL

JUNE
1914

A SWISS BEEKEEPERS' CONVENTION

At the apiary of Mr. Belperrin, near Neuchatel, Aug. 17, 1913, mentioned in the Editor's "Notes from Abroad" in this number.

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec14" on your label shows that it is paid to the end of December, 1914.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 5 lines accepted.

DISCOUNTS:
3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 23d of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n } **ANTHONY BIAGGI,**
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

This is the Discount Season on

BEE-SUPPLIES AND BEES

Write us stating what you are in need of, and we will quote you. If you sell supplies our discount sheet is yours for the asking. Catalog on request.

I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

"If goods are wanted quick, send to Pouder."

BEE-SUPPLIES

EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moistuie to prevent breakage in sections. No shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POUDER, 873 Massachusetts Ave., Indianapolis, Ind.

"Griggs Saves You Freight" **TOLEDO** **"Griggs Saves You Freight"**

With four carloads of new goods on hand, we are now better prepared for the rush than ever. But don't wait to be in the **RUSH**. Send your order in now and have the goods on hand, ready for use.

New Illustrated Catalog of 60 Pages

We want one in every beekeeper's hands.
Send postal for one today. It is free;

White Clover Extracted Honey Wanted, also Beeswax

in exchange for supplies. It will be to your interest to get in touch and keep in touch with us.

S. J. GRIGGS & CO.
24 N. Erie St., Toledo, Ohio
"Griggs is always on the Job."

Queens That "Are Better" **Italians and Banats**

Untested Queens, 75c each; $8.00 per dozen; two or more dozen in one order, $7.50 per dozen
Tested Queens, $1.25 each; $12.00 per dozen.
Breeder Queens, $3.00 each. Foreign trade add 5 cents each extra.

½-lb. pound packages of bees after May 1, $2.00. Select queen wanted, add to this. The express charges on these will be very small in comparison with charges on frame nuclei.

One-frame Nuclei, with untested queen, $2.00 each; 2-frame, $3.00; 3-frame, $4.00. Full colony of bees in 10-frame hive, $7.00. Add 50 cents if Tested Queen is wanted; $2.00 if Breeder Queen is wanted. For ten or more colonies or nuclei, deduct 25 cents each.

I have successfully shipped bees and queens from this place every month of the year. I started two colonies Jan. 25 on their voyage to Nutsusarida, Kobe, Japan. Each contained a Breeder Italian Queen.

Dear Sir:—The two colonies of bees shipped by you arrived safely, and are perfectly satisfactory. M. SARIDA, Kobe, Japan.

My Bee and Queen exhibits at the State Fair of Texas were awarded six premiums in 1911. Italians also were awarded First Prize at the Cotton Palace in Waco, Tex.

"YOUR MONEY'S WORTH" is my motto. TERMS are *cash* with order. I refer you to Sabinal National Bank or any business firm in Sabinal.

I have ten yards, and with several hundred nuclei I can serve many customers. I solicit your trade.

J. A. Simmons, Uvalde Co. Apiaries, Sabinal, Texas

CEDAR WOOD

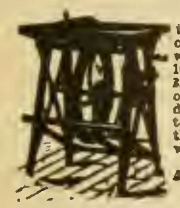
Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.
J. C. Frohliger, Berkeley, Calif.
Greater San Francisco

Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery



Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES
995 Ruby St., Rockford, Ill.

Please mention Am. Bee Journal when writing.

Try My Famous Queens
From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

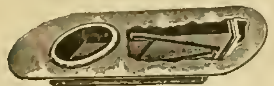
3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, one, $1; six, $5; 12, $9; 25, $17.50; 50, $34; 100, $65. Tested, one, $1.50; six, $8; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two-frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

P-O-R-T-E-R

(Trade mark.)



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SAVES { HONEY / TIME / MONEY } AT ALL DEALERS

Each, 15c; Doz., $1.65, postpaid

If your Dealer does not keep them, order from Factory, with complete instructions.

R. & E. C. PORTER, MFRS.,
Lewistown, Illinois

BEEKEEPERS' SUPPLIES

Such as Winter-cases, Sections, brood-frames of every description, Section holders, Comb Foundation, Supers, Hive-bodies, Smokers, etc.

Get my prices before placing your orders.

R. H. SCHMIDT
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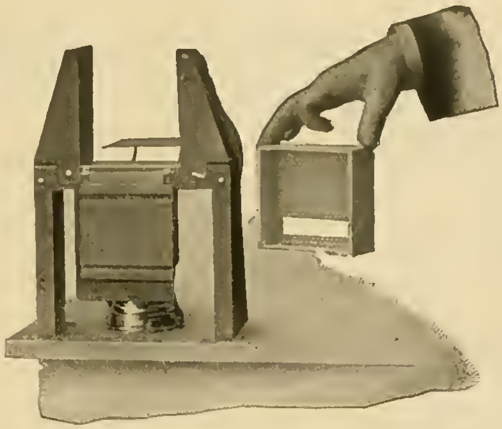
WOODMAN'S SECTION FIXER



A new machine of pressed-steel construction for folding sections and putting in top and bottom starters at all one handling.

With top and bottom starters the comb is firmly attached to all four sides, a requirement to grade fancy. Increase the value of your crop this season by this method.

The Editor of the Beekeepers' Review, in commenting on things at the recent Detroit, Michigan, beekeepers' convention, stated: "It was the consensus of opinion of those that saw the machine work, that it was the best thing for the purpose ever brought on to the market."

The Chicago-Northwestern Beekeepers' Convention in December unanimously adopted the following resolutions:

WHEREAS, This convention has been impressed by the exhibit of the Woodman Combined Section Press and Foundation Fastener, and believe that the same is practical and a labor saver for the beekeepers at large. Therefore, be it

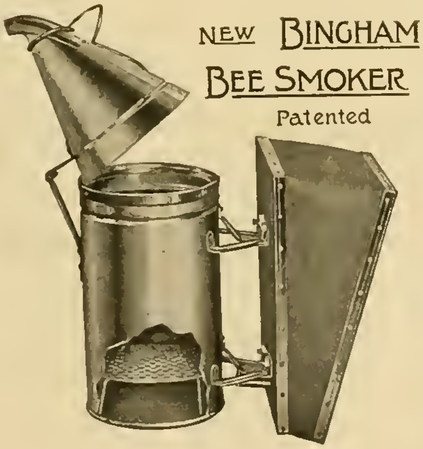
Resolved, That the Chicago-Northwestern Beekeepers' Association in convention assembled, do heartily endorse the above device as a practical machine for the beekeepers producing comb honey.

I. E. PYLES.
ARTHUR STANLEY.
W. B. BLUME.

It makes no difference how many or what kind of fasteners you have, we want you to try this one. Your money back if you are not satisfied that it is the best on the market. Send for special circular, showing 10 illustrations. Immediate shipment of all goods. 40-page catalog.

Price, with one form, 4x5 or 4 1-4x4 1-4, $2.50. Extra form, 15c. Daisy Lamp, 25c. Weight of outfit, 4 pounds. Postage extra.

A. G. Woodman Co., Grand Rapids, Michigan



The New Bingham Bee-Smoker

the all important tool of the most extensive honey-producers of the world. This illustration shows the remarkable steel-fire grate which such men as Mr. France, Mr. Rauchfuss, the Dadants and others say is the **best** on the market. The Smoke Engine grate has 381 holes for the air and draft, equal to an opening 2 inches square. Buy the large sizes and be pleased. For sale at your dealers or direct. Weight each.

Smoke Engine	4-inch stove....1¼ lbs.		$1 25
Doctor	3½-inch stove..1⅝	"	.85
Two larger sizes	in copper, extra	"	.50
Conqueror	3-inch stove.....1½	"	.75
Little Wonder	2½-inch stove...1	"	.50

Two largest sizes with hinged cover.

A. G. WOODMAN COMPANY,
Grand Rapids, Michigan

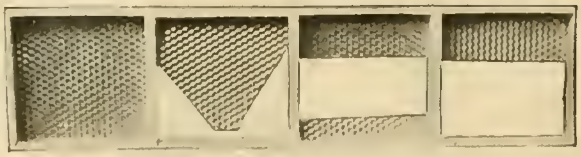
Root's Goods in Michigan

Our Specialty — The "Root Quality" Bee Supplies to Michigan Beekeepers Prompt Service in Shipping. We sell at factory prices. Beeswax Wanted Send for 1914 Catalog showing our Parcel Post Service.

M. H. Hunt & Son, Dept. A, Lansing, Mich.

"Falcon" Hives, Supplies and Foundation

Everything for
the
BEEKEEPER



"Falcon"
Foundation made
in the "Falcon"
plant at
Falconer, N. Y.

SUPPLIES FOR 1914—Take inventory of supplies now and figure what you will need for a slim season. Get them ready at odd times in the winter; and if there is a good season you will have ample time to re-order in April and get them for use. We like to make 'Inventory Sales" of "**Falcon**" supplies, for we know that we are dealing with an up-to-date beekeeper.

INVESTMENT—What is the investment of an extra $25.00 in supplies to the loss of 500 pounds of honey? Resolve to change for 1914 and buy "**Falcon**" supplies now.

EARLY-ORDER DISCOUNT—For "**Falcon**" hives and supplies bought now we give an early-order cash discount equal to 12 percent per year. You see it pays for a strictly money basis. Write for early-order discounts, and send list of wants for quotation.

"FALCON" QUALITY—In making our beehives, all of our waste lumber is made into cheap toy building-blocks, so that we are able to put better material in our hives and goods. Get a trial lot this fall so that you can see for yourself, and still have time to order 1914 supplies.

FREE SAMPLES of our famous "**Falcon**" foundation, made in our factory at Falconer, N. Y., cheerfully sent postpaid with copy of catalog, and name of nearest dealer if desired.

FACTORY W. T. FALCONER MFG. CO., - Falconer, N. Y., U. S. A

Where the good bee-hives come from

FLAX BOARD

Flax Board is now used by thousands of beekeepers East and West. We have in our office hundreds of unsolicited letters from some of the largest and most progressive beekeepers in the United States, saying that it is just the thing that they have been looking for for many years, and that they are putting in on every hive in their apiary.

The cost of Flax Board is small. It undoubtedly will pay for itself many times every season. You, of course, know that you must protect your bees against the cold in spring if you want to rear brood for the early honey crop. You also know that most of the heat escapes at the top of your hive while the cold comes in at the bottom. With the use of Flax Board, however, you can entirely overcome this.

We will gladly send you a small sample free if you will write for it

One-half inch thick Flax Board to fit top of hive:

Size.	Price.	Weight.
8-frame	$ .10 each	1¼ lbs.
10-frame	.11 "	1½ "

Order a lot. Try them on some of your hives and compare the difference.

MINNESOTA BEE SUPPLY CO. 100 Nicollet Island
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Manufacturers of Dovetailed Hives, Sections, and Shipping Cases.

We Make a Specialty of
Manufacturing
SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

SUPERIOR
GOLDEN QUEENS

Untested, $1.00; 6, $5.00; 12, $9. Select Untested, $1.25; 6, $6, 12, $10. Prices on application for tested and untested queens by the hundred. Address,

T. S. HALL, Talking Rock, Ga.

Gray Caucasians
Best Bee for Everybody

Glass Honey Dishes
The Handiest Dish in the Home

Cambined Bee-brush
and Hive Tool
A Great Tool for the Bee Yard

Ant Dope
Guaranteed to Rid Everything of Ants

Prices sent free. Write to-day.

A. D. D. Wood
Box 61, Lansing, Michigan

Am Now Shipping Untested Queens
from My
CELEBRATED
PEDIGREED STRAIN!

My bees are the product of many years of breeding by both Swarthmore and Henry Alley. Both names stand out like beacon lights among our past and present breeders, for the best queens ever produced in the United States. Never had foul brood.

SWARTHMORE APIARIES, · Swarthmore, Pa.

TAYLOR'S 1914 THREE-BANDED
Italian Queens

Now ready by mail; 26 years' careful breeding for the best honey-gatherers. None better. Prolific, and honey-getters. We fill all orders promptly. Untested, $1.00 each, or $10 a dozen. Tested, $1 25 each, or $12 a dozen. Select tested, $1.50 each, or $15 a dozen. Breeders, the best, $5.00. Send all orders to

J. W. Taylor & Son, Beeville, Bee Co., Tex.

Queens of Quality

3 band leather color. Unt., 60c each; $7 00 per doz. Sel. Unt., 75c each; $8.00 per doz. Circular free. **J. I. BANKS, Liberty, Tenn**

The Double-Walled Massie Bee-Hive

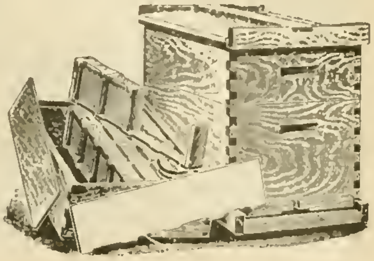
THE KRETCHMER MFG. CO
COUNCIL BLUFFS IA
MANUFACTURERS OF
THE MASSIE PATENT
DOUBLE WALLED
BEE HIVE

THE MASSIE HIVE
For Comb or Extracted Honey

Surest Protection for Bees—Increased Supply of Honey—
The Best Hive for any Climate
Furnished in the clearest of lumber in either Cypress, White Pine or Redwood

THE MASSIE VENTILATED BOTTOM
Admits fresh air into the hive, lessening the chance of swarming, and giving renewed energy to the bees.

Fifty years in the bee supply business has shown us that the **MASSIE** is **the very best hive,** and testimonials to this effect are received daily from those who are using this hive.



The Dovetailed Hive.

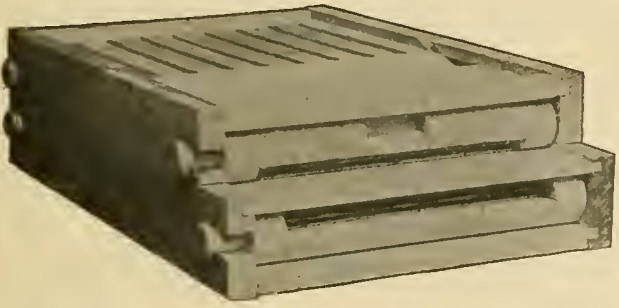
WHY NOT GIVE US A TRIAL ORDER? **SATISFACTION FULLY GUARANTEED**

We are also extensive manufacturers of **Dovetailed Hives** and **all other Apiarian Supplies.** If you are in the market for supplies be sure to get our prices before buying elsewhere. We issue a 72-page illustrated catalog which will be mailed to any one upon request.

KRETCHMER MFG. CO., COUNCIL BLUFFS, IOWA

FEATURES OF ADVANTAGE OF THE

ROLLER ENTRANCE BOTTOM BOARD



1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.
2. It controls the mating of the queen so that mismating is prevented.
3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position.
4. It sifts automatically undesirable drones out of the hive, and cages them in the drone trap.
5. It permits ample ventilation at the height of the honey-flow.
6. It can be instantly closed when moving bees in and out of cellars or from one yard to another.
7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.
8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.
9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.
10. It is adjustable to make a shallow bottom for summer and a deep one for winter.

It contains many other valuable features which will be apparent to any beekeeper upon investigation, and if it is once tried it will always be used.

8-frame size, $2.00; 10-frame size, $2.50. Italian Queens, Breeders, $10 to $25.

Nothing sold under $10.

CHAS. G. SCHAMU
INVENTOR AND MANUFACTURER **Box 48, LIVERPOOL, NEW YORK**

TENNESSEE-BRED QUEENS

42 years' experience in queen-rearing—Breed 3-band Italians only

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested.........	$1 50	$ 7.50	$13.50	$1.25	$ 6 50	$11.50	$1.00	$ 5.00	$ 0.00	$ .75	$ 4.00	$ 7.50
Select Untested	2.00	8.50	15 00	1.50	7.50	13 50	1.25	6.50	12.00	1.00	5.00	9.00
Tested...........	2.50	13.50	25.00	2.00	10.50	18.50	1.75	0.00	17.00	1.50	8.00	15.00
Select Tested....	3.00	16 50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2 00	10.00	18.00

Capacity of yard 5000 queens a year—Select Queen tested for breeding, $5

The very best Queen tested for breeding, $10. 300 fall reared tested Queens ready to mail, $2.50 to $10 each.

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed.

John M. Davis, Spring Hill, Tenn.

NEW ENGLAND BEE KEEPERS
Everything in Supplies
New Goods. Factory Prices
Save Freight and Express Charges
CULL & WILLIAMS CO.
Providence, R. I.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to
Colorado Honey-Producers' Association
Denver, Colorado

W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

BEEKEEPERS' SUPPLIES

Write us for our 64-page catalog. **Free.** Full information given to all inquiries. Let us hear from you. We handle the best of bee-supplies for the beekeeper. Our shipping facilities are good. We cater to parcel post and express orders—none too small nor too large. Beeswax exchanged for supplies or cash. **John Nebel & Son Supply Co., High Hill, Missouri**

QUICK SHIPMENT OF QUEENS

of 3-band stock reared for honey-gathering qualities
Untested, June, $1.00. Later, 75c
Tested, $1.50. Select tested, $2.
Send your orders now and be assured of having queens when you want them. **R. A. SHULTS, Cosby, Tenn.**

The One Subject on Which all Beekeepers Can Agree

Lewis Sections!

There are many subjects on which no two beekeepers can agree; but here is one they can agree on. They all acknowledge that Lewis Sections are the best to be had - that they excel in quality and workmanship—and when you say Quality and Workmanship, you have said all there is to be said about a honey section.

Let us take you with us through the different operations and show you how Lewis Sections are really made.

First the material, which is the best Wisconsin white basswood that can be obtained, is bought by an experienced buyer by the carloads - millions of feet of it. It arrives at the Lewis factory in the board and is sorted as carefully as a woman picks over strawberries.

The best boards are then sent on their buzzing journey through the factory—fed through a planer watched over by a veteran in the business—sawed up into correct thicknesses and lengths and run through a polisher, the sandpaper polishing both ways of the grain.

Then the particular work commences. Here is where the intricate machinery gets the strips, rabbets them, scores them, dovetails them, and then the finished sections are packed away. But the secret is here: This delicate machinery is cared for like a trotting horse - the Lewis section foreman has been watching it, caring for it, keeping it right for the past thirty years.

He is Still on the Job Making Lewis Sections for You

No matter what Hives, what Frames, what Supers, and whatnot you use.

Insist on Lewis Sections

Every crate going out with the Lewis name means something to you. Here is what one of our customers has just written us:

> "We have been using the G. B. Lewis Company's No. 1 Sections for several years, and have a **few** other makes, but I find the Lewis goods the best. We have put up about 30,000 sections so far this season, and have not found one section in the lot that was not perfect. We find they fold perfectly and hold together where some of the other makes come apart. We use the Rauchfuss Combined Section Press and Foundation Fastener and Dadant's Foundation."

G. B. Lewis Company, Watertown, Wisconsin

Sole Manufacturers

Thirty Distributing Houses.

Send for the name of the one nearest to you.

AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JUNE, 1914

Vol. LIV.—No. 6

EDITORIAL COMMENTS

Wisconsin Inspector Report

We are in receipt of the 16th annual report of the State Inspector of Apiaries of Wisconsin. Mr. N. E. France shows 285 apiaries inspected containing 9070 colonies. Of these 3117 colonies were diseased in 151 apiaries.

Another great advantage derived from the inspection management in Wisconsin, is the information bureau for beekeepers wanting to either buy or sell bees, queens, honey or bee-supplies. Every State might have such a bureau of information. Mr. France is doing splendid work for the beekeepers of Wisconsin.

Dr. McIndoo on the Organs of Smell

All who care to be informed as to the natural history of the honey-bee—and every beekeeper should be of that number—will be interested in Dr. McIndoo's investigations regarding the smelling organs of the honey-bee. His conclusions, however, are so radically different from anything passing current heretofore, that they are not likely to find ready acceptance. Something like this is likely to be said: "That's all very interesting, but not at all convincing. As stated in the article, 'Both scientists and beekeepers are now generally agreed that the honey-bee has an acute sense of smell, and that its olfactory organs are located in the antennæ.' Is the generally accepted belief to be lightly set aside without the fullest proof? Dr. McIndoo objects that 'all the antennal organs are covered with a hard membrane through which odors must pass in order to stimulate these organs.' But one gets a rather different impression in reading Cheshire, Vol. I, page 109, when the 'smell hollows' of the antennæ are mentioned as 'covered by a thin layer lying over a goblet-formed cavity beneath, into which passes a nerve-end cell.' The idea that the bee smells with its sting, an organ nearly always inside the bee, seems a little like a man smelling with his liver. We know the queen is accepted or rejected according to its smell, and when a bee is smelling at a queen, or at other bees, we can see it use its antennæ."

However, although it is the general belief that the organs of smell are in the antennæ, it never has been considered a matter of certainty. Cheshire, on the page already quoted, speaks of certain parts of the antennæ as "almost certainly olfactory." That "almost" means that we are still on the lookout to learn whether the organs of smell are in the antennæ or elsewhere, and if elsewhere, where? Dr. McIndoo says he has discovered the true organs of smell, and says it with positiveness. No doubt some will ask, "Who is this man, that we should believe such a startling statement from him?" Mr. McIndoo is one of that small band of earnest investigators that Dr. E. F. Phillips has gathered about him at Washington. That position entitles to serious consideration any statement he may make, and it becomes us to have at least an open mind, watching in the meantime [illegible] treat his views. See his article in this number.

Alfalfa Seed Produced Without the Help of Bees

We are in receipt, from the Department of Agriculture, of a circular letter explaining how seed may be produced in alfalfa without the help of bees, by the artificial or accidental "tripping" of the flower. This is the "snapping back of a part of the flower to deposit pollen on the stigma."

However, the cross mating of flowers by the fertilization of one blossom with the pollen of another cannot take place without the action of bees. It appears from this letter that the honey-bee is less efficient in this than some of the wild bees. But as the honey-bees are more numerous than the others, where they exist at all, it necessarily follows that the most flowers are fertilized through their agency. Cross fertilization ensures seed production in about twice as many instances as when the flower is fertilized by its own pollen.

The reader will find in this number an article from the pen of our learned correspondent, Mr. John H. Lovell, with illustrations, showing a few of the numerous kinds of bees in existence on the American continent. Pollen-gathering bees are to be found even in the northern mountains, where the summer is less than three months duration. Nature evidently provides well for the needs of all its productions. But where flowers are grown artificially in immense fields, as with our alfalfa-covered plains, an artificial production of pollen-gathering insects is necessary, and our honey-bee proves its usefulness.

Bulletin No. 75, of the Department of Agriculture, entitled, "Alfalfa Seed

Production; Pollination Studies," will be of interest to those of our readers who are scientifically inclined on this subject.

Temperature of the Cluster in Winter

Bulletin No. 93, of the Department of Agriculture upon the above subject, is a report of special studies made by our well-known and able friend, Dr. E. F. Phillips, in charge of bee-culture investigations, and his assistant, Mr. Geo. S. Demuth. The wintering problem was their aim, both indoors and outdoors. A number of colonies were studied and kept under close control with thermometers within the cluster, and in different parts of the hive. Electrical thermometers were used, by means of which readings could be made without approaching the hives, thus avoiding disturbing the bees.

The bulletin contains 16 pages, and may be had from the Department of Agriculture in the usual way. We will make a few quotations from it.

It was formerly admitted, without proof, that the temperature of the cluster in the hive, was at all times about that of human blood. But it appears that it may be much lower. The bulletin says:

"When a colony is without brood, if the bees do not fly and are not disturbed, and if the temperature does not go too high, the bees generate practically no heat until the coolest point among the bees reaches a temperature of about 57 degrees F. At temperatures above 57 degrees a compact cluster is not formed, but the bees are widely distributed over the combs. At the lower critical temperature, which is for the present stated as 57 degrees, the bees begin to form a compact cluster, and if the temperature of the air surrounding them continues to drop they begin to generate heat within the cluster. * * * At the temperature at which other insects become less active (begin hibernation) the honey-bee becomes more active and generates heat; in some cases until the temperature within the cluster is as high as that of the brood-nest in summer. * * * These conditions do not apply when the colony has brood. The rearing of brood in winter causes a marked increase in heat production." * * *

It is therefore apparent that in low temperatures the bees feel the necessity of heat production.

A diagram given of temperatures taken in cellar wintering shows that in a room kept at temperatures varying between 38 and 44 degrees, the temperature of the cluster varied between 64 and 88 degrees in one hive and between 71 and 91 degrees in another.

A number of interesting remarks were made, some of which confirm facts which practical beekeepers have noticed. For instance, when a hive is opened in cold weather, the bees are found to form a compact cluster. But those on the outside of the cluster are less active than those in the interior of the cluster.

"When a comb from the center of the cluster was shaken, the active bees in the center of the circle dropped off readily, and those in the outer shell which were somewhat sluggish were removed with more difficulty. * * Evidently the bees in the shell, whether in the cells or between the combs, are less active than those in the interior of the cluster."

Also it was noticed that "bees fan to heat the cluster in winter as well as to cool the hive in summer. Observations of this kind were repeated beyond number, and this theory of the method of heat production is entirely supported by the repeated observation of a humming noise from the cluster during the cold weather." Like human beings, they stir more or less to keep warm.

This study is very interesting, but as Dr. Phillips states: "Too hasty conclusions must not be drawn from the facts here presented."

One point is not mentioned which we think is of importance, it is the comparative strength of colonies experimented upon. We have often seen colonies so powerful that they were ready to emerge from the hive at the least disturbance in the coldest weather. Such colonies must generate greater heat than weaker ones, or must sustain it more evenly. We would suggest comparative studies (if not already made) of the largest and strongest colonies with medium and weak ones, both indoors and outdoors.

As this is but the beginning of the scientific study of the winter problem, we may expect tangible and very useful results in the near future, if the Department of Agriculture continues the employment of capable and steady workers who will persist in accomplishing tasks like this. The wintering problem is a constant menace to the beekeepers of the North. It needs to be thoroughly studied.

Good Advice for Michigan

Mr. F. E. Millen, State Apiarist and Inspector from Michigan, has a very good article in the April 25 number of the Michigan Farmer on "Spring Work in the Apiary." Unlike many aricles which appear from time to time in farm papers, this article does not try to emphasize how to keep a pocketful of dollars by big crops of honey. Mr. Millen gives some practical advice applicable to such conditions as a beekeeper is apt to meet in spring just before the crop is on.

One point made, and one which is often misunderstood by the smaller beekeeper especially, is that the clipping of queens' wings does not have anything to do with *prevention of swarming;* it simply keeps the swarms from absconding after they have issued, owing to the fact that the old queen is unable to follow.

MISCELLANEOUS NEWS ITEMS

Cyprian Queens.—Unfortunately we have misplaced our list of subscribers desiring to obtain Cyprian queens. Those interested should write to W. B. Davis, of Aurora, Ill. He has some pure stock.

◆

Large Crop for Russia.—In the Russian Beekeepers' Review, Mr. Kormilcev, of Powelen, reports 688 pounds of honey from one colony in 1913, in an American hive.

◆

Education by Cinematograph.—Educating the people concerning bees by the moving picture show is one of the growing methods. At the French Agricultural Exhibit in Paris, in January, they showed agricultural scenes, such as plowing, harvesting, etc.; they also exhibited insects in their changes from eggs to larvæ and thence to winged insects. They also showed the transferring of bees from the common skep to the movable-frame hive, swarm harvesting, queen laying, honey extraction, etc.

The picture show, which is so often used for sensational exhibits, may thus be put to excellent use for the education of the masses.

◆

Oldest Living Member of the National Association.—On the first page of the May issue, Dr. Miller asks if there isn't some mistake in reckoning concerning who is the oldest member of the National Association. The Editor had given 81 years as my age, which is correct. But he should have stated that I was the oldest living member in attendance at the first National convention of beekeepers ever held in America, which met in Indianapolis, Ind., during the winter of 1871.

In case Dr. Miller was at that convention and is 83 years old, he will pass, but not otherwise. Mr. M. M. Baldridge, of St. Charles, Ill., was at the convention, and I think is still living, but I do not think that he is as old as myself.

G. Bohrer, M. D., Chase, Kan.

◆

Save Your Beeswax Refuse.—Beeswax is high in price now, some producers have been offered in the neighborhood of 35 cents per pound for their accumulations. It behooves the beekeeper to save every scrap that may be turned into beeswax. While on the rounds of our apiaries one hive was found in which the combs had been completely demolished by the moths last fall, after they were thought to be safe. It seemed plausible that this sediment left by the moths ought to contain at least a small percentage of beeswax. The black looking dirt was gathered up and carried home to be run through a Hershiser wax press as a trial.

From what had been 10 full combs, Dadant size, was extracted 14 ounces of beeswax. This, too, in view of the fact that the lot made so small a batch that not a little proportion of the wax must have been left in the burlap packing when pressing.

Do not let the moths destroy your combs by any means, but if they do destroy them, do not throw away the residue as unfit for any use. Save it together with bits of bur comb, and render it together with your other slumgum, or, if you prefer, send it to some of the supply men who make a business of rendering old combs and slumgum into wax.

A good way to preserve old and crooked combs from moth until you have leisure time to render them is to keep them covered with water in a tub or barrel.

◆

Development of Apiculture.—Russian apiculture progressed last year, the production of honey being above the average. The year was an unusual one in many respects; the spring was early, warm weather setting in as early as March, and many beekeepers brought out the hives from their winter abodes. At the end of March the first honey appeared. However, the warm weather was not of long duration; after the middle of April a wave of cold spread over Russia. In the southern regions this happened during the flowering period of the fruit and destroyed buds and blossoms. The cold weather lasted for some time, and May, which is usually the chief month of the bees' activity, proved unsatisfactory, the bees not resuming work until June. In well kept apiaries, where the bees were provided with warm hives and sufficient food, they did not suffer much from this delay, but in the ordinary apiaries of the peasants a great number perished of hunger and cold; and those that survived were able to collect later in the season only the necessary winter supply of honey. A great improvement was noted in June in the central, eastern, and southern provinces of Eupean Russia, where white clover, buckwheat, sunflowers, and many other plants furnished a large supply of food.

In the western territories the weather continued cold and wet through June. In the wooded districts, where the production of honey depended upon the flowering of trees and shrubs, the outcome of the season was poor. For instance, the honey obtained from lime trees, which is preferred to other kinds by the consumers, and is produced in large quantities in the province of Nizhni-Novgorod, was very scarce last year. On the other hand, apiaries situated in the open country and the steppes showed a large yield.

Good results were obtained from the following provinces of central Russia: Kostroma, Vladimir, Moscow, Ryazan, Tamboff, Penza, and part of Tula; and in the following northern and eastern provinces: Vyatka, Perm, Ufa, Nizhni-Novgorod, Simbirsk, and Kazan.

Detailed statistical data have been obtained from the instructor appointed by the Department of Agriculture in the province of Kostroma. In this province there are 100,000 hives, and the yield of honey has been good, averaging 41 pounds per hive; the yield of wax averaged 0.7 pound per hive. In several rare instances as much as 433 pounds of honey were obtained from one hive. The average prices were 15 cents per pound of honey and 37 cents per pound of wax. The total revenue from apiculture in Kostroma for 1913 amounted to more than $500,000.

A satisfactory yield was obtained in the provinces of Kovno, Grodno, Smolensk, St. Petersburg, and Pskov, and an average yield in Volhynia, Podolia, Samara, Saratof, and Tver; but in both regions the production was inferior to that of the previous year. These territories show a great variety of prices, depending upon the facilities for marketing the product. Results were unsatisfactory in Poland, Vitebsk, Vilna, and Orel, where in manv apiaries the honey produced hardly sufficed for keeping the bees through the winter.

Last year again demonstrated the lack of organization in the marketing of honey, and the dependence of the beekeepers on the wholesale purchasers who often make a profit of 200 to 300 percent.

Serious drawbacks to apiculture were the prevalence of sickness among the bees brought on by the unfavorable weather and the beekeepers' ignorance of modern methods. Apiculture is developing every year, and the need of instruction in scientific beekeeping is recognized by most of the producers. The Government has been asked to provide such instruction.

◆

Necrology.—Died, at Paris, March 30, at the age of 74, Mr. E. P. Caillas, vice-president of the Central French Beekeepers' Association. He was secretary of the International Congress of Beekeepers at the Paris Exposition of 1900. Mr. Alin Caillas, the chemist, is his son.

◆

Meeting of Iowa Beekeepers at Delmar.—The meeting at Delmar, July 7, will be held at the Coverdale farm. Mr. Coverdale has become famous as a grower of sweet clover, and is considered authority on the subject. He has experimental plots showing what sweet clover will do when handled scientifically. Mr. Coverdale will deliver an address explaining what sweet clover will do for the farmer and stock raiser. Any one contemplating sowing sweet clover can well afford to make a trip across the State to hear Mr. Coverdale, and see his experimental plots as well as his large acreage.

Mr. C. P. Dadant will probably attend and deliver an address. He has been asked to choose his own subject.

Mr. Frank C. Pellett, Iowa's State bee-inspector, will also speak on foulbrood conditions in Iowa, foulbrood laws, etc. Mr. Pellett is a lecturer of note, and is president of our State Association and a live wire. He isn't very large, but you will know he is at the meeting all right. Other subjects will be discussed informally, but the three addresses will be well worth your time.

Don't forget the basket dinner.

Let everybody come whether a beekeeper or not. Let us all boost for the Delmar meeting. W. S. Pangburn.

◆

Cool, Cloudy Weather.—The following note from California is self-explanatory as to conditions there:

> Orange bloom passed with a very small amount stored compared to former years. Black sage is yielding, but the flow is very slow. Cool, cloudy weather is the rule, and only occasionally a day when bees will not rob when extracting. Expect one-third to one-half of a crop. White sage is beginning to bloom. L. L. Andrews.
> Corona, Calif., May 15.

◆

Beekeeping in Germany.—At the end of 1912 there were counted 2,619,891 bee-hives in Germany, over half of these being in Prussia. Silesia leads the Prussian provinces with 187,264, and all of the non-Prussian States, only Bavaria has more (over 400,000). The province of Posen counted 122,705.

The Silesian Chamber of Agriculture is given a fund to promote bee-culture, which it uses according to plans proposed by the General Association of Silesian apiculturists. The association is composed of 163 societies with a total membership of 7300. The provincial exhibition was held last year at Hirschberg. The chief instruction course was given in a Breslau suburb, and auxiliary courses at Trachenberg and Richtersdorf. Seventeen observation stations were in operation during the year. The chamber also advises in legal matters, assists in marketing honey, and maintains a library of books on bee-culture. A trial honey market was held in connection with the fruit market in Breslau from Nov. 12 to 14, and good sales resulted. Nearly all the societies used the privilege of tax-free sugar for winter feeding. While the highest honey production of a colony was 24.9 pounds, there was a considerable variation in the colonies, the lowest result being 4.19 pounds. The average was 12.1 pounds against 15.4 pounds the year before.

The widespread attention given to apiculture makes this district a good market for beekeepers' supplies. A list of special dealers in various cities of Silesia and Posen is forwarded [and may be obtained from the Bureau of Foreign and Domestic Commerce]. The list also contains the addresses of the six members of the Silesian Chamber of Agriculture that constitute the standing committee on apiculture, poultry breeding, etc., who would probably be interested in catalogs of American firms.

Unfortunately it is difficult to get business from circulating printed matter in English, and the consulate is unable to predict results when this is relied upon. If manufacturers will inform the consulate to what extent they are prepared to go after the trade and what methods they have hitherto used in foreign business, more detailed suggestions will be cheerfully furnished.—*Daily Consular and Trade Report.*

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Encouraging the Use of Honey in Cooking

I thank you for your prize of the American Bee Journal I received at the Northern Michigan State convention. We had a nice time. I also received a prize on my honey candy. In my display I had both comb and extracted honey, honey candy, honey cake, a mince pie sweetened with honey, and honey fried cakes. I think if the beekeepers' wives would go to the conventions and take some of the good things that can be made with honey with them, and then do as we did, cut them up and pass them to the visitors, we would have more call for honey. [Mrs.] Jos. Burkholder.

Mancelona, Mich.

Your idea of having beekeepers' wives display their honey and the toothsome things made with it at conventions is good. Such a display will stir up other beekeepers' wives and daughters, and then if they in turn can be induced to offer such displays at State and county fairs where the mass of the people can be reached, larger results may be obtained.

◆

Ventilating Comb-Honey Supers

Referring to what is said on page 83, Harry Bell writes that what was said on page 30, was based on actual experience and not on supposition. He says: "We know our colonies in double-walled hives and double walls around the comb-honey supers with the ⅜-inch entrance have given us the best results. It may be all right to ventilate in your locality, but it would not work here in the production of comb honey."

◆

"Put-Up" Hives

A correspondent who has read "Fifty Years Among the Bees," and has also read what is said about "put-up" hives on page 121 of this journal, is puzzled to know how bees get out of the upper, or "put-up," hive, seeing there is no communication between the two hives His trouble probably comes from not making the proper distinction between "hive" and "hive-body," and he has made the mistake of supposing that a hive-body is put up instead of a hive. When a hive is mentioned, its bottom-board is generally supposed to be with it, and if the bottom-board be taken away the hive-body is left. As here stated, each hive has its own bottom-board.

The accompanying outline sketch shows a hive with its supers, and a "put-up" hive over all.

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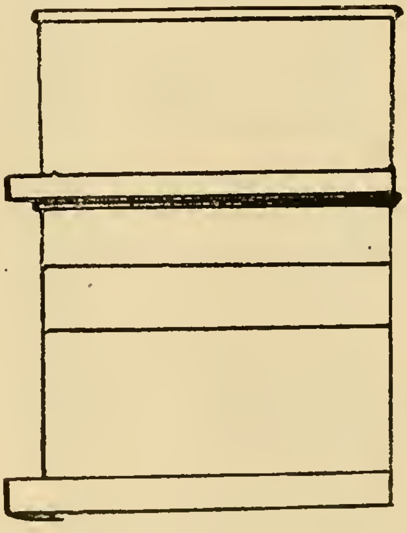
Variation of "Put-Up" Plan

On page 121, something was said in this department about what we did last year in the way of treating colonies that swarmed or were likely to swarm, saying that we followed the plans laid down in "Fifty Years Among the Bees," generally the put-up plan, which is given on page 167. Referring to this, a Pennsylvania correspondent says he has looked it up in the book and does not comprehend it. He seems to think that he must go from page 167 to 168, 184, 186, and 189, and says: "Now I would be pleased to see this plan set forth in one body of statement from A to Z." Then he says he is against finding queens, and does not want to have clipped queens, and that when on page 167 the return of queens is mentioned that seems to presuppose clipped queens.



The "Put-up" Plan.

All of which leaves one a bit dazed as to how to meet the case. Our Pennsylvania friend plainly understands the plan to involve the finding of queens and the clipping of queens, but wants the plan to be given in detail. What good to give the plan if he rejects two of the important factors? Sounds like saying, "I've decided I'll not follow the plan, but I want you to give it all very clearly in detail."

Let us, however, do what may be done to straighten matters out. In the first place, if Pennsylvania will again turn to page 167, and read straight through to the end of the first paragraph on page 170, he will find the plan "set forth in one body of statement from A to Z." To be sure, the matter is referred to again further on, but does not militate against the fact that the whole plan is given all in one statement in the place mentioned.

On page 167 the statement opens by saying: "When a swarm issues and returns." Pennsylvania is quite right in thinking that this presupposes that the queen is clipped, for swarms with unclipped queens do not usually return. His queens are not clipped, so

Mrs. Burkholder, of Michigan.

that knocks out returning swarms. That, however, does not knock out entirely his using the plan, for he may anticipate the swarming by dealing with the colony before swarming; that is, when he finds queen-cells well advanced. Indeed, that may be better than to wait for actual swarming.

But he does not want to search for queens. That's a more serious affair. Yet even then, something like the plan may be followed. Here is what may be done, giving details as fully as may be allowed: When it is found by the presence of sealed queen-cells or large grubs in queen-cells that the bees are bent on swarming, go to the hive containing the colony to be treated, which hive we will call A, and set beside it an empty hive which we will call B. Lift A off the stand, and set B in its place. One by one lift the frames out of A, brushing back into a A every bee from each comb except one, and then put the beeless combs into B. In this way it is made certain that the queen will be left in A. The one comb is left in A so that bees and queen will not desert. The vacant place left in B may be filled by a dummy or by a brood-comb of any kind from elsewhere. Fill out A with frames of foundation or comb. If supers were on A, as most likely there were, they were of course set aside temporarily while making the changes of comb mentioned. Now set these supers on B, and over them place the cover. Set A on top of all, and cover it up.

There is no communication between the two hives, each having its own bottom-board and its own entrance, as also its own cover. A large part of the bees are in A, but none of the field-bees will remain in it, for upon their return from their first journey afield, they will steer straight for the lower entrance and enter B. Of course all cells upon the combs were killed at the time the bees were brushed from them. Ten days later all cells again started are killed, and the brood-comb with its adhering bees is taken from A and put in B, after which all bees remaining in A are brushed upon the ground in front of B, and allowed to run in at the entrance. A is now taken away entirely, and any combs in it disposed of wherever desired.

This plan with its variation is not by any means given as an improvement, but as fulfilling the desire to operate without being obliged to hunt for queens or to have them clipped.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

A Good Honey Crop for Dixie

Up to this date (May 5) the reports from all sections in Dixie show that we have already had an average honey crop. Mr. S. S. Alderman, a beekeeper down on the Apalachicola river, in the great tupelo gum belt, reported some time ago that the bloom was not as great this year as usual, and he feared the flow would be correspondingly light, but my apiarist in the tupelo gum region reports a good crop.

South Florida has again had a great crop. The poplar and other spring honey plants up in the hills and mountains are now giving a great yield.

The market is practically bare of honey, and at present new honey is bringing a good price, and shipments are moving rapidly. As we have no uniform prices for honey in Dixie, it is needless to state a figure, but let me suggest that every beekeeper add one or two cents to his former prices; this will mean considerable in the wind up against the higher prices of bee-supplies.

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Wants to Move Bees to Make Increase

Mr. Rish, a beekeeper down on the Apalachicola river, wants to know if he could move 50 colonies of bees up the river 75 or 100 miles to the cotton fields, and increase them to 100 colonies during the cotton flow?

Yes, this could be very well done. The cotton is a good honey plant, also a great pollen plant, and the flow is long, and bees would naturally build up rapidly, and probably store enough surplus to carry them over winter. But I entertain a doubt whether it would be best to undertake this venture or make the increase right where they are. There is always some honey coming in on the river from snow vine and other similar vines, and this would make it ideal for increasing where they are located.

Mr. J. K. Isbell and S. S. Alderman, of Wewahitchka, Fla., have for a number of years moved their bees up the river to the cotton fields in order to build them up in numbers and stores for winter, and at the close of the cotton flow moved them back down the river for winter and spring, but their latest report shows that it does not pay them, and that they expect to discontinue this practice. If the flow should not be heavy enough to make the desired increase, a cheap grade of honey could be obtained and a slow feed kept up with good results. It is a lot of trouble and expense to move bees, and this compared to feeding might prove more unfavorable than leaving them where they are for this job.

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Back to the Blue Ridge Mountains

On June 1, myself and family, consisting of wife, small daughter and an orphan girl we have taken to rear, will leave for our summer cottage up in the Blue Ridge Mountains, where we expect to spend the summer months. My mother, who has had the privilege of visiting us but one time in 18 years, on account of sickness in her family, will join us and spend the time there with us. We used to spend this time at the seashore, but find that it is more satisfactory in the mountains. This is not done so much on account of my broken down condition as for the betterment of my wife, who has been almost a helpless invalid for years. But I am usually almost to this point in health at the close of the spring work, after the heavy strain of mental and physical labor.

It may be a surprise to those who have never visited me, to know that I take a cheap helper and work from two to five apiaries daily during the spring months. This work consists of looking over brood-nests, ventilating hives, adding storing room, making increase where it is wanted, and keeping it down where it is not wanted. I cannot make the trips by an automobile, but very often travel by rail. At this time all of our experienced helpers have all they can do, and are usually under as great physical strain as I am, but the responsibility of the entire field is on me. Besides this, from 10 to 30 letters go out every 24 hours to beekeepers in different parts of the country, who are not in any way connected with my own bee-business, but desire information. This all plays heavy on a small, frail man, and he must get out from under it as soon as he can.

By June 1, the spring crop of honey is gathered, and removing, packing and shipping is under full way. This can all be done by the well-trained helpers I have without my constant oversight. The sales of the crop of honey made falls to me, and I am more centrally located up in the mountains to do this work. The summer and fall flows come on slowly, and are not so heavy, and no danger of swarming if the bees have plenty of ventilation and storing room, and our help can easily keep up this work. By the time this task comes on, the surplus spring honey has been removed and packed.

At the close of the slow summer flow I am back, and take up the work of making the last increase, requeening and the last general apiary work. My correspondents will please take notice and address me after June 5 at Mountain City, Ga.

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The Cause of Swarming—Ventilation the Deciding Factor

The Editor commenting (page 152) on Mr. Randolph's article under "Swarming Notes," page 164, strikes a "key note" when he says, "While there are no doubt cases in which other factors so strongly favor swarming that no amount of ventilation will prevent it, the likelihood is that when other factors are almost but not quite strong enough to carry the day, lack of ventilation is the deciding factor to cause swarming."

Bees for several seasons under the care of a thoughtful and prudent apiarist with good equipment, will swarm but very little naturally during a honey flow if weather conditions remain good during this time, so that the field bees eep at work in the usual manner. If during this time we have adverse weather conditions, and the field-bees are confined more or less to their hives, they may naturally acquire the swarming fever, for they seem to have nothing else to do. Under the former conditions the question of ventilation would have had very little if any importance, but under the latter it is the deciding factor.

Not many bees will be seen clustered about the bottom of a well ventilated hive during ideal weather, but when the reverse comes, even the large well opened entrances will be filled with bees, and the spaces between the bottom frames and up between the frames for some distance will be found clogged with bees. They have a job to maintain the heat of the colony and stay about the bottom, and do not crowd the upper part of the hive. As soon as the weather clears these bees clustered about the bottom will return to the field, and there is no more added to this swarming impulse than usual.

There is nothing I dislike more than to find a strong colony of bees with only a small entrance, and with a great fanning corps all about the entrance roaring as if about to smother. If they are not clustering about the entrance, you will find them in small clusters up through the hives, and those scattered about over the comb running as if panic stricken.

This method is poor policy, poor beekeeping, and the cause of poor honey crops. We have tested it too many times. Bees cannot work properly in a hive under such conditions, neither can they evaporate very much nectar, especially if it contains a great amount of water, as it would naturally make thin honey, if not evaporated well. This makes the comb or capping brown over as fast as the honey is finished, and it is hardly marketable.

So we ventilate a reasonable amount by placing under each side of the hive, on bottom-boards, a square ⅞-inch strip cut as long as the hive, which gives a good vent from back to front, and allows a good current of air to pass under and up between the frames if the bees need it; if not, they will cluster there and shut it out. This is also the only sure cure for hanging out during a honey-flow.

CALIFORNIA BEE-KEEPING

Conducted by J. E. Pleasants, Orange, Calif.

Crop Notes

On April 17, 18, and 19 there was a very hot dry wind, the temperature rising to 90 degrees one day. This, as is always the case when the temperature reaches that point early in the season, did much damage to the plants in bloom at that time. The black sage (our best honey plant), which was well in bloom, suffered most. It looked for a time as though it were wilted, but in two or three days following the hot wave the weather changed, and the two weeks following were damp. During this time 1.35 inches of rain fell. This gave new life to the plants, and bees are still working on black sage. The beauty of the sages is that they remain in bloom so long, especially the black variety.

While the bees were checked some in their work by the rain and cloudy weather, they have built up rapidly, and most apiaries are strong in bees, and ready for the fine working weather which we have been having of late—foggy mornings and warm sunny days. While few have extracted much yet, except from the orange flow which was light, the outlook now is more favorable.

There is an excellent growth of white sage, though little of it is in bloom yet. It is too early to tell about sumac, but it has come out well from last year's freeze, and ought to give us some yield. There is a report from San Diego county of a lack of early nectar and pollen, causing the bees much loss. A shortage of pollen in southern California is a very unusual thing.

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Some Native Honey Plants of Southern California

As California ranks well as a honey-producing State, and as the native flora shows a marked difference from other sections, perhaps a short sketch of our wild honey plants may be of interest. As we go from the cultivated valleys of the south where irrigation is universal to the foot-hills, we begin to notice that the distant purple of the mountains is changing to a soft blend of gray and green We go higher and are in the midst of the great wild bee-pasture of southern California, the home of the sages, the sumac, and countless others which make what the botanists call the "chaparral belt." They form a dense covering over the mountain sides from the foothills up to about 6000 feet elevation, where this dense growth gives way to the pine forests.

Along the canons are live oaks and sycamores, whose decided dark and light greens lend a pleasing contrast to the duller tints of the mountain sides. This is the bee-pasture which furnished our large crops of the '70's and '80's, before orange or bean nectar were commercial assets.

The black sage is king of them all. When climatic conditions are favorable I think black sage can be relied upon to produce more "gilt edge" than any other plant in the West, and for body and flavor it is hard to excel. It blooms for weeks. The blossom is small and inconspicuous, but what a flow of nectar it can yield!

The white sage is a much prettier plant. Its soft gray leaves and tall blossom spikes make it quite showy; while its pleasing aromatic odor breathes the very essence of wild perfumes. But this queenly plant is much more inconstant than its plainer sister. Some years it produces a good harvest, others very light.

The silver or purple sage, which has silvery leaves and brilliant light purple blossoms, is usually a good producer, but is much restricted as to locality. All the sages produce delicately-flavored white honey.

The "wild alfalfa" is a small legume much resembling alfalfa in habit of growth, but has bright yellow blossoms.

The California sumac is a dull green bush, not so attractive as its eastern relative. It is quite dependable, and produces an amber honey of good flavor. Last year the sumac was badly

Apiary of B. E. Schunchel, in California.

Another View of Mr. Schunchel's Apiary.
Notice the decoy hive in the tree to the right.

frozen, but is coming out well this season.

The “wild buckwheat” is a species of *Eriogonum*. It grows in almost all localities, but in some, yields a much better grade of honey than in others. Near the coast its honey is apt to be dark and not of a good flavor, while back in the canons bordering on the desert it yields better, and is of good quality.

The “coffee berry” is a beautiful dark green shrub with dark glossy foliage. Its fruit which changes color from red to black, resembles the berries of the true coffee. It grows only in the cool damp canons, and gives a good flow of amber honey.

The “California holly” (which is not a holly at all, being a member of the rose family), yields very freely for but a short time. The honey is white. This is one of our most beautiful mountain shrubs. Its dark green leaves and heavy panicles of heavy white blossoms make it showy in summer, while its brilliant crimson berries in midwinter brighten the whole landscape. This furnishes the Christmas decorations for all California; hence the term “holly” by which it is known.

There is a gorgeous yellow pentstemon, shrubby in growth, distributed freely along many canons. Its flowers resemble the snapdragon in shape, and are nectar yielding. The dark chamiso or “chaparral,” as it is also called, whose clusters of bloom now whiten the mountain sides, is a great favorite with bees, but chiefly for pollen. This is the chief use also of the gray artemisia, which lends much of the gray to the landscape. This plant furnishes abundant stores of winter pollen, but it has of late years spread to such an extent as to crowd out many a worthier plant.

The hoarhound was introduced here. It is a steady yielder, but the honey from it is very dark, and the plant itself is such a pest that most people, even bee-men, regret its introduction.

The wild lilac, a beautiful shrub whose sweet-scented, lilac-colored blossoms furnish much pollen, is noticeable on account of its blue pollen. I had a hurry call from a beginner not long ago who thought he had disease among his bees. On inspection it was the blue pollen that had caused the alarm. The bees were rather weak owing to local conditions, but perfectly healthy.

I have mentioned only the most important of the native plants. There are many others which give us nectar in varying quantities.

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

Crop Prospects, Outlook, Etc.

May 12, sugar maples and yellow willows are in bloom. But with weather cool and a drizzling east rain falling, the prospect is not pleasant for the beekeeper who would like to see the bees carrying great loads of pollen from the maples, and an abundance of much-needed nectar from the willows. I say “needed nectar,” for although there may be lots of old stores in the hives, nothing seems to be quite as good to cause a great boom in brood-rearing as some nice fresh nectar in combination with the natural pollen gathered at this time of the year. To date of writing the weather has been steadily cool with little precipitation; in fact, unless we soon get rain a short crop of hay is assured.

But bees wintered well, and judging from present appearances they are steadily building up, even if the days they can fly and bring in nectar and pollen are few and far between. The little clover we had last fall is now past the danger point, and in our section at least it has wintered well.

In another 10 days fruit bloom will be on, and if weather permits queen clipping and other work of the season will be in order. After the long time since active work with bees, we look forward with pleasure to being in the harness again. Only a few weeks at most until the harvest, great or small, will be a thing of the past, and the beekeeper can again take it easy if he wishes. This is one of the drawbacks of beekeeping, looking at it from one angle, for if the great amount of work that is often crowded into a few weeks could be divided up into that many months, it would make things easier all around. But no doubt it is much better than we could possibly arrange it for ourselves.

Newspaper Advertising of Honey Too Expensive

Constantly we hear about the benefits of advertising honey so as to increase the consumption of this useful and toothsome delicacy and food. Any kind of advertising is to be commended as long as it is truthful and not misrepresenting, and while each individual beekeeper can do much in his own neighborhood to increase the consumption of honey, the longer I study the question the more it seems to me that extensive newspaper advertising is impossible. Why? Because the cost of producing honey is too near the selling price to allow much money to be paid for advertising.

Take the various patent medicines, breakfast foods and drinks, different kinds of corn syrups, etc., the names so common to us all through seeing them in the papers that any child could give a list off hand. In almost, if not in all of these cases, the selling price is many times the cost of production, so it is easy to see why they can advertise so extensively. Then, again, each firm is advertising an article produced only by themselves, and they get the benefit of all the advertising done. In the case of honey, if my neighbor beekeeper across the road advertises the good qualities of honey, the chances are that if the advertisement does any good I will share equally, even when I am not paying a cent for advertising.

Newspaper advertising costs a tremendous amount of money if done at all extensively. This means that other forms of publicity will have to be employed if we ever expect to increase the consumption of honey by means of advertising. If I could truthfully advertise that *my* honey was better than anybody's else, it might pay me to advertise; but no matter how good a product we had, very few of us would make such a decided statement as that. I remember tasting a sample sent in

1 ——. 2 ——. 3. Carl Hanneman. 4. E. S. Hildemann 5. ——. 6. Joseph Kurth. 7. ——. 8. John Hearn. 9. A. C. Allen. 10. N. E. France. 11. Gus Dittmer. 12. Mrs. W. R. Harte. 13. Mrs. W. Habermann. 14. Mrs. C. M. Soelch. 15. Mrs. Frank Kittinger. 16. J. I. McGinty. 17. ——. 18. Mr. Sayles. 10. Freman Johnson. 20. August Diehnelt. 21. W. H. Habermann. 22. H. H. Moe. 23. Harry Lathrop. 24. H. M. Rood. 25. Herman Gloege. 26. Francis Jager. 27. L. V. France. 28. Prof. Sanders. 29 Chas. Alberts. 30. John Wambold. 31. E. B. Rosa. 32. Lawrence Post. 33. N. K. Walsh. 34. Geo. Acker. 35. John Willgrub. 36. Fred Blunck. 37. A. A. Linn. 38. Wm. H. Wallace. 39. M. M. Rice. 40. Mrs. M. M. Rice. 41. G. M. Ranum. 42. Jacob Paulson. 43. Ogden Glaeden. 44. A. C. Woodbury. 45. E. Engels. 46. A. L. Kleeber. 47. ——. 48. ——. 49. ——. 50. ——. 51. Louis Post. 52. ——. 53. H. C, Ahlers. 54. W. C. Smith. 55. Mr. Huffmann. 56. Frank Kittinger. 57. Geo. G. Harte. 58. Mr. Sykes. 59. F. E. Matzke. 60. L. W. Parman.

response to an advertisement stating that the honey had a taste of the woods, and was superior to all other honey, etc, When we found the sample inferior, you all know what we thought of the advertiser. This is an extreme case, no doubt; it simply shows one difficulty in advertising honey.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER. Boulder, Colo.

Shipping Bees from Southern New Mexico—Loss in Weight

May 4, five 2-pound packages of bees were shipped to me by express from southern New Mexico. They were shipped without queens. Leaving there at 10 a.m. of the 4th, they reached Boulder at 9:35 a.m. of the 7th. At 11:30 a.m. they were placed in empty supers over weak colonies of bees with which I wished to unite them. By 4:30 p.m. of the 7th, the bees were out of all the shipping-cages in which they came. Counting from the time they were put into the cages to the 4th, the bees were in them about 70 hours. The weight given, gross, for the five packages at the shipping point was 23 pounds. The gross weight when I received them was 19½ pounds, showing a loss in weight of 3½ pounds. This was the amount of water and candy consumed and loss in bodily weight of the bees. There might be a slight variation in the scales, but mine are quite accurate, and I assume that those at the shipping point were accurate also.

The weather was almost ideal for springtime when the bees arrived, so that conditions could hardly have been better. The packages were numbered 1, 2, 3, 4, 5.

Number 1 weighed 4 pounds and 8 ounces gross when put up, and 3 pounds and 12 ounces gross when received. The net weight of the live bees at time of packing was 2 pounds, and 1 pound and 10 ounces on arrival. There were less than 25 dead bees in the package. The bees ate about one-fourth of the candy provided, and the water can was about two-thirds full. Three-eighths of a pound must represent the loss in bodily weight, or probably more accurately must be the amount of honey the bees were loaded with before they were put in the cages.

Number 2 weighed 4 pounds and 12 ounces when put up, and 3 pounds and 12 ounces when received. The weight of the live bees was 1½ pounds. There was about ¼ pound of dead bees in the package. One-half of the candy had been consumed, and also about one-half of the water. The loss in bodily weight of the live bees was about ¼ pound.

Number 3 weighed 4 pounds and 8 ounces when put up, and 3 pounds and 4 ounces when received. The light weight of this package is explained by the fact that the cover to the water can came off *en route* and the water was lost. There was 1⅛ pounds of live bees and about ⅛ pound of dead bees. The loss in bodily weight of the live bees was about 12 ounces, unless there was some loss in the weight of the dead bees, which would equal the loss in weight of the live ones. The great loss in weight is accounted for in this case by the lack of water. There was, however, only half as many dead bees in this package as in No. 2, which had plenty of water. But this cage, No. 3, was needing attention when it came, as the bees had their tongues out and were crying for water. Strange as it may seem the bees in this package were loath to leave it, and the last half of them finally had to be shaken out. They had consumed one-half of their honey.

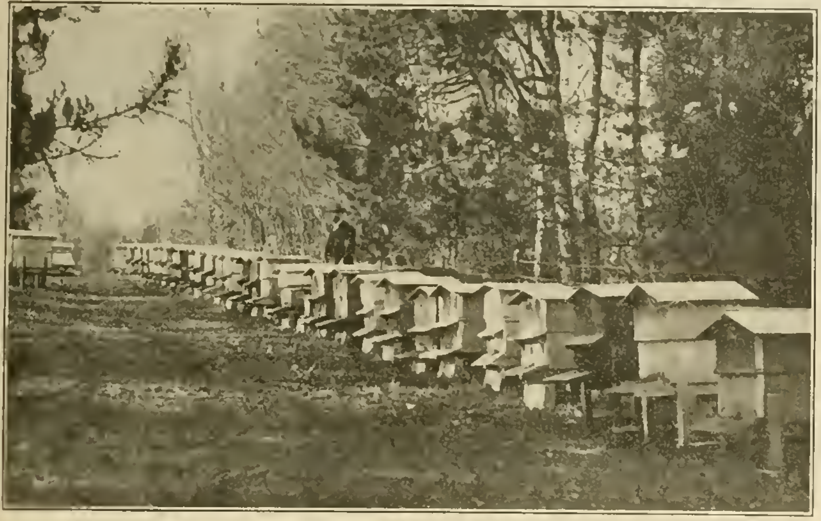
Number 4 weighed 4 pounds and 12 ounces when put up, and 3½ pounds when received. The weight of the live bees was 1¼ pounds, and there were over ¼ pound of dead bees in the cage. This cage had the most dead bees in it. They had eaten half their candy, and the water can was still full, the little hole in the cover being too small apparently, and also clogged with a speck of dirt.

Number 5 weighed 4 pounds and 8 ounces when put up, and 4 pounds when received. There were less than 25 dead bees in the cage, and the weight of live bees was 1⅞ pounds. This cage came through in the best condition of any. The candy had only been one-third consumed and little of the water used. The hole in the water can also seemed to be clogged, but the bees must have gotten some of the water, as they did not seem to be suffering.

The cages were tacked together with lath, and were spaced about 5 inches apart, so that there would be ample circulation between the clusters in the cages. The express was $1.64 on the 23 pounds weight. If the bees could have been sent by parcels post the cost would have been 98 cents.

It will be seen that 10 pounds of bees were shipped in these five packages, and that 7½ pounds of live bees were taken out. There was a loss of less than one pound of bees dying *en route*, the remaining loss being in bodily weight as mentioned above. It would seem that, for shipment this distance, 25 percent more bees would have to be put in to make the weight of full 2 pounds hold out.

It is my intention to keep up the experiments in shipping bees without combs until we know what we can depend upon, then perhaps it will not pay us to winter our bees in the North. I shall receive another shipment of five packages in a day or two, and it is probably on the road now. The weather is warmer and the bees may not come through in such good shape.



One of the Apiaries of Pierre Odier, Celigny, Switzerland.

CONVENTION PROCEEDINGS

The Wisconsin State Meeting

The Wisconsin State Beekeepers' Association met in convention in Madison Feb. 2. N. E. France was elected temporary president. The Assembly Room was well filled, over 80 beekeepers, including 8 ladies, being present.

Rev. Francis Jaeger, of the University of Minnesota, addressed the convention on "Present Needs of Wisconsin and Minnesota Beekeepers." His argument was a comparison of old-time and present day methods, not only in beekeeping but in dairy work. He urged beekeepers to organize along the same lines as the various agricultural societies.

M. E. Eggers spoke on, "Should a young man specialize on beekeeping?" The report of A. C. Allen, delegate to the National, was substantially as published in the Beekeepers' Review. A committee on resolutions was appointed, consisting of E. B. Rosa, H. H. Moe, and Herman Gloege.

The convention adjourned until 1:30 p.m.

At 1:30 p.m. the meeting was called to order, and Rev. Francis Jaeger addressed the convention on "A separate department of beekeeping at the State Agricultural College." Brother Jaeger showed the necessity of its being not only separate, but independent, as in the Minnesota University. Here in Wisconsin it is a department of the Agricultural College. Under Prof. Sanders it is perfectly satisfactory to the Wisconsin State Beekeepers' Association, but it might not be so under a possible successor.

Prof. Sanders spoke on "The value of a single beekeeping course at the State Agricultural College." He is held in high esteem by the beekeepers, and always commands close attention.

L. V. France exhibited charts, showing distribution of different honey-plants, number of colonies, etc., in the different counties of the State. Mr. France stated that answers to his inquiries had not been as full as anticipated; however, he was voted the thanks of the convention with the request to continue the work.

After the supper a large number went to the Agricultural College, where they were entertained by an address by F. Wilcox, general survey of beekeeping, State and National; also a stereopticon entertainment by N. E. France, inspector of Wisconsin apiaries.

SECOND DAY—MORNING SESSION.

A good share of the morning was taken up by "five minute talks" on "One important thing I have learned this year."

The election of officers for ensuing year resulted as follows: President, N. E. France; vice-president, Frank Wilcox; secretary, Gus Dittmer; treasurer, Harry Lathrop.

It was decided by an almost unanimous vote not to send a delegate to the National.

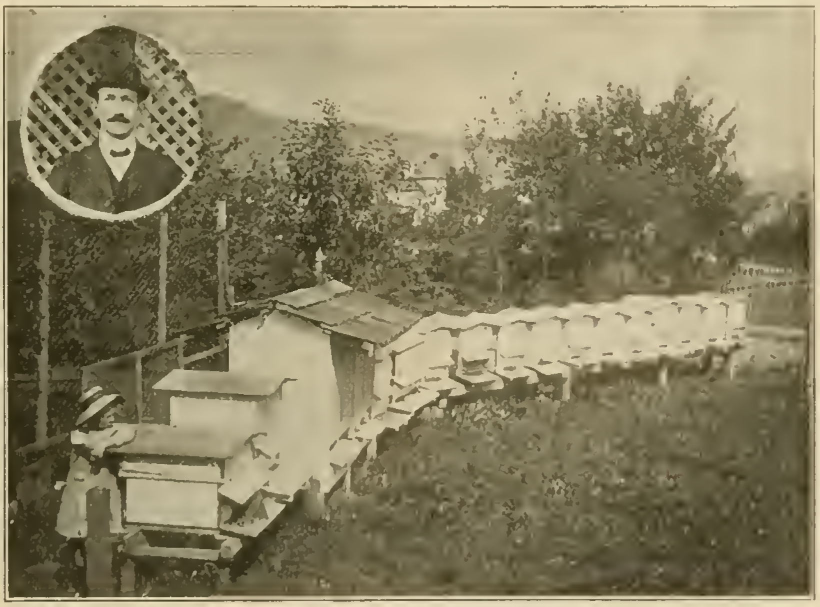
The Committee on Resolutions reported the following:

WHEREAS, The Supreme Ruler of the universe, in His all-wise providence, has deemed fit to call from our association our beloved president, Jacob Huffman; therefore, be it

Resolved, That we, the Wisconsin State Beekeepers' Association in convention assembled Feb. 3, 1914, do hereby express our sorrow at the loss of our beloved President, that the beekeeping world has lost an able counselor who will be hard to replace; therefore, be it further

Resolved, That a copy of these resolutions be spread upon our minutes; that a copy be sent to the family, and that the chair be draped in mourning during the time of this convention.

H. H. Moe.
E. B. Rosa,
Herman L. Gloege,
Committee.



Jos. Walther at Delemont and His Apiary.

The resolutions were adopted by a unanimous rising vote.

A paper was read by Mr. Frank F. France.

On motion, N. E. France was recommended for the appointment of State Inspector of Apiaries by the Governor. Mr. Frank Wilcox was recommended for the appointment of judge of the Apiarian Exhibit at the State Fair.

Meeting then adjourned.

Gus Dittmer, *Sec.*

NOTES FROM ABROAD

By C. P. Dadant.

Zermatt, Neuchatel

The trip to Zermatt, from the head of Lake Geneva, is up the valley of the Rhone, then up the Visp until we reach the center of a cluster of snow-covered mountains, of which Monte Rosa and the Matterhorn are the highest. But the latter is the more conspicuous, owing to its sharp peak.

The Rhone river which we first saw at Lyon, then at Geneva, at its exit from the lake, is the feeder of that lake, through which it flows from east to west. As we ascend eastward towards its source, we pass through the Canton of Valais. We again see vineyards, on shelves one above another, meadows and small fields of grain and potatoes, looking like the patches of a quilt. Irrigation is practiced, for the climate is dry and the water from the peaks is plentiful. We see it run in every direction. It is diverted into the fields by side ditches, and a flat stone serves to turn it right or left as needed. To one accustomed to the majestic and quiet flow of the Mississippi, the waters of the Swiss mountains appear in a great hurry, for they tumble in their haste, in every direction, and we can go nowhere without hearing the murmur of the brooks. There are running fountains in every village. The houses seem odd, with their long eaves and brown walls. The roofs are often made of coarse flat stones, laid like shingles. But how they managed to build some of these houses is a mystery, for they look like eagles' nests on the mountain side.

We reached Zermatt on Aug. 9. It was cold, and we could see snow in every direction. To enjoy climbing, one must *train*. We took no time to do this. An inclined cog road took us clear up to Gornergrat, where an immense hotel has been built. There we stayed over night in company with a dozen other tourists. The hotel was supposed to be heated, but they had only pine wood to fire with, and when we complained of our room being chilly, they excused themselves on the the bad quality of their fuel. It was at this hotel that, for the first time in our lives, we had to pay even for the water we drank. We went away the next day, disgusted with the accommodations, but delighted with what we had seen at sunset and sunrise. From the top of the Gornergrat, we had been shown, through a telescope, the ridge line forming the Italian and French frontiers, guard houses, flags, caravans, of alpinists walking on the snow, things which, owing to the distance, did not make even a speck on the immaculate white of the snow, when sought with the naked eye. The setting or rising sun, shining on that immensity of white, shading it with pink and red, made an impression beyond description. Instead of 12 tourists, there should have been 1200. The thousands who come stay there only a part of the day, owing to the defective accommodations of that huge caravansary, which they call "Hotel Gornergrat." The crowds are found below at Zermatt.

Returning to Zermatt, we stayed there only long enough to visit the immediate surroundings, especially the Gorner Gorge. This, however great and frightful, is a diminutive wonder when compared with the gorges of the Aare at Meiringen, which we saw later in the month.

Back to cultivated lands and warmth, we landed at Brig on the 11th, where we proceeded to get rested and warmed up, in a very comfortable hotel. Brig is near the Swiss end of the Simplon tunnel. It rained and we stayed there two days, at the end of which we left for Interlaken, via the new railroad of the Lotschberg, a beautiful scenic line, just completed. Reached Spietz for dinner. It rained. Went on to Interlaken. It rained that afternoon and all the next forenoon. We then resolved to go back towards Lake Geneva, where we had left the fair weather and where we had a friend to visit—a relative of one of our neighbors in the United States—living in the city of Rolle. Passing through Bern, Fribourg and Lausanne, we reached Rolle in the evening. The rain caught up with us, but had spent its force and clear weather followed.

In these trips we heard more German spoken than any other tongue. But it would not do to speak secrets aloud, when using either French, English or Italian, for everybody seems to understand everybody else. Americans are so numerous that little attention is paid to them. However, an American family, in a touring-car with a colored chauffeur, attracted the curious at Brig. Evidently colored men are rare in Switzerland.

While in Rolle, the friend we were visiting accompanied us to a litte town up the sunny hills that beam upon the lake, to visit a school teacher, who is a beekeeper and an apiary inspector. He had called him on the telephone and announced that a foreign beekeeper wished to visit him. This apiarist had bee fever, the genuine disease, for he awaited us eagerly and could talk on but little else. He had some 60 colonies, all hybrids. The hybrids of Italian and Swiss bees are almost uniformly reared in French Switzerland, through the slow but steady importation of Italians across the Alps. I have given in the December number my explanation of why the pure Italians are not liked in Switzerland. It is useless to repeat it.

Here I heard for the first time in Europe, of European foulbrood. He had had it, and had cured it in other apiaries as well as in his own. He had had combs containing honey from diseased colonies accidentally robbed by healthy colonies without bad results. So he readily understood that our method of cure by changing the queens would be likely to succeed. However, he practiced the starving method, removing all the combs. According to Dr. Carton, this ought to succeed in any case. He thought so himself.

He had seen the May disease, and I gave him the address of Prof. White,

Rough and Ready Bee-culture in Corsica.

Bee-culture in Corsica—J. Ruffy in Foreground.

of Washington, D. C., asking him to forward samples to him, whenever he found it. He was sure that it was caused by the famous "nosema." Yet Prof. White has failed to discover this parasite in a number of samples sent him.

We walked up to his house, and sat down and I made note of his replies to my questions. He was intensely interested. In discussing foulbrood, I had occasion to ask him whether he had read what we wrote about it in the French edition of Langstroth Revised. Then it became apparent that he had misunderstood our name when we were introduced. He jumped up from his chair and insisted on shaking hands over again with both Mrs. D. and myself. He was so enthused that he would hardly let us depart when the time came for us to take leave. It was very amusing and interesting.

Distances are not great in Switzerland, and one is soon transported from one part to another. The railroad accommodations are fine. The coaches have, like ours, a passage through a center aisle, but instead of being in only one or two compartments, each car has five or six sections. About two-thirds of them are smoking compartments, for smoking is very popular, whether pipe, cigar or cigaret. The women are accustomed to it. Once or twice we even saw some good-looking women smoking like the men. (Why should they not?) The smoking compartments, marked "raucher, fumeurs, fumatori," in German, French and Italian, are always the most crowded.

During the summer months the crowds are immense. When you reach a railroad station in any large tourist resort, you wonder how they can succeed in accommodating the thousands who are there. But the train comes in, unloads, reloads, and goes again, with everybody aboard in comfort.

In the afternoon of the 15th, we started for Boudry, near Neuchatel, the home of Mr. Gubler, from whence I wrote the letter inserted in the October Bee Journal. In three hours we were there. A young man with a spring wagon awaited us at the station and took us at once to the Orphans' Home managed by Mr. Gubler, located about a mile away, on the slope below the mountain, where pure air and open fields are enjoyed by some 50 boys between 8 and 16 years of age.

Mr. Gubler is not only the editor of the Bulletin D'Apiculture, which has taken the place of the Revue Internationale, formerly published by Mr. Bertrand, he is also president of the Société Romande D'Apiculture. The name "Romande" represents nothing connected with Rome, as might be understood by the uninformed. It represents simply that part of Switzerland in which the French or Romanic language is spoken, in contradistinction with the parts of the same country where German is used. It covers the cantons of Geneva, Vaud, Neuchatel' and a part of Valais, Fribourg and Bern. The association numbers about 2000 members, and is subdivided into some 20 different branches, which hold local meetings and send delegates to the central association.

The little magazine, which is their official organ, is furnished to members at 42 cents per annum, while outsiders have to pay 62 cents. They have a mutual insurance against losses by foulbrood, and have also succeeded in getting from the several cantons regulations for the inspection of bees and the destruction of contagious diseases. Apiaries are small but numerous. At the meeting of the Neuchatel section, which we attended on the Sunday following our arrival, about 80 members were present. We give a cut of this on our cover page. The meeting was held in the basement of a house right by the apiary of Mr. Belperrin at Areuse. But the photograph had to be taken upon the hillside, in the vineyard, because the apiary is located under dwarf fruit trees in such a manner that a good picture of it could not be made. In the evening the beekeepers were congregated together at a banquet given in the neighboring village on the shore of the Lake of Neuchatel. As a trolley line joins Neuchatel with the vicinity, we were only 15 minutes from our lodgings. The lake is some 25 miles long, with pretty villas and villages all along.

A few details as to our quarters in the Boudry Home and the hospitable reception we enjoyed, will give a local coloring to our description. The guest chamber in the Home is a special room in the second story of the big barn. However queer this may appear to American readers, this chamber is kept in as fine a style as some of the best hotel rooms, with white walls, fine furniture, framed paintings on the walls, etc. Flowers fresh from the garden were daily brought in a vase, and every night we found an immense hot-water bottle in our bed. We protested against this, but it was of no avail, and we had to submit. The evenings were cool, and our hosts were unwilling to chance our catching cold. The private office of the manager, in the main building, was our writing room, and upon his desk we found a framed picture of Grandpa Dadant. It was there also that I first saw the magnificent work of Gaston Bonnier on the flora of France, Switzerland and Belgium.

While at Boudry, we had numerous invitations from local beekeepers. We accepted only a few, for our time was limited.

CONTRIBUTED ARTICLES~

Sense of Smell of the Honey Bee

BY N. E. MC INDOO, PH. D.,

BUREAU OF ENTOMOLOGY, WASHINGTON, D. C.

(*Extract from Journal Exp. Zool., Vol. 16. No. 3. April, 1914.*)

EVER since man has kept the honey bee, he has asked the following questions in regard to its sense of smell: (1) How well can the honey bee smell? (2) Where are its olfactory organs located? (3) How important is this sense in the lives of bees? Both scientists and beekeepers are now generally agreed that the honey bee has an acute sense of smell, and that its olfactory organs are located in the antennæ, but the critics have never been convinced that the antennæ carry the organs of smell, because all the antennal organs are covered with a hard membrane through which odors must pass in order to stimulate these organs.

During the past three years the writer has devoted his entire time to a study of the olfactory sense in the honey-bee

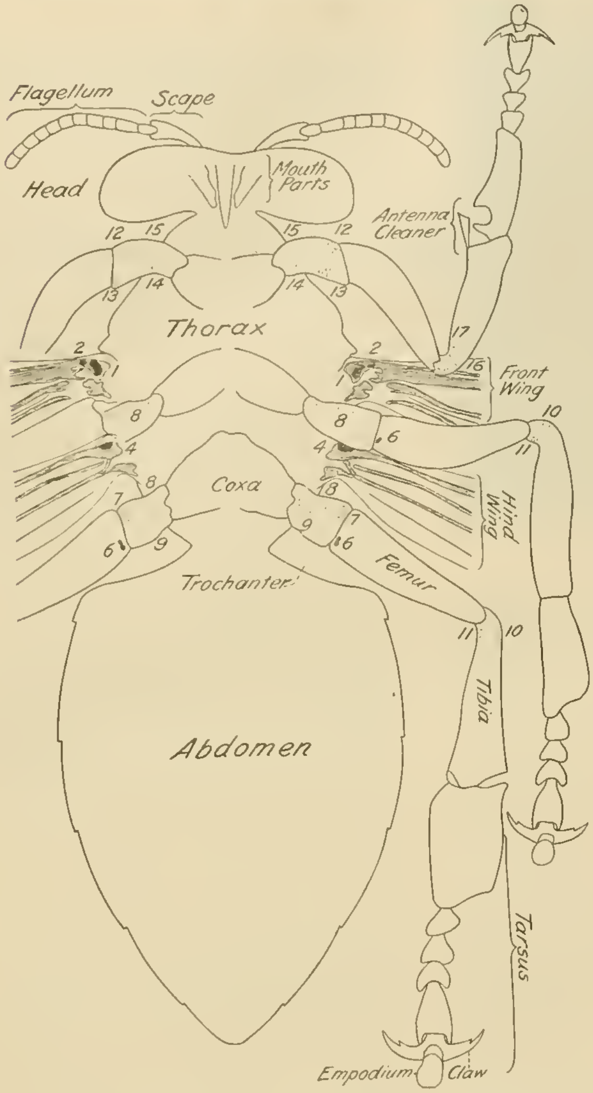


FIG. 1.—Ventral view of a worker-bee, showing location of groups of alfactory organs as indicated by the numbers.

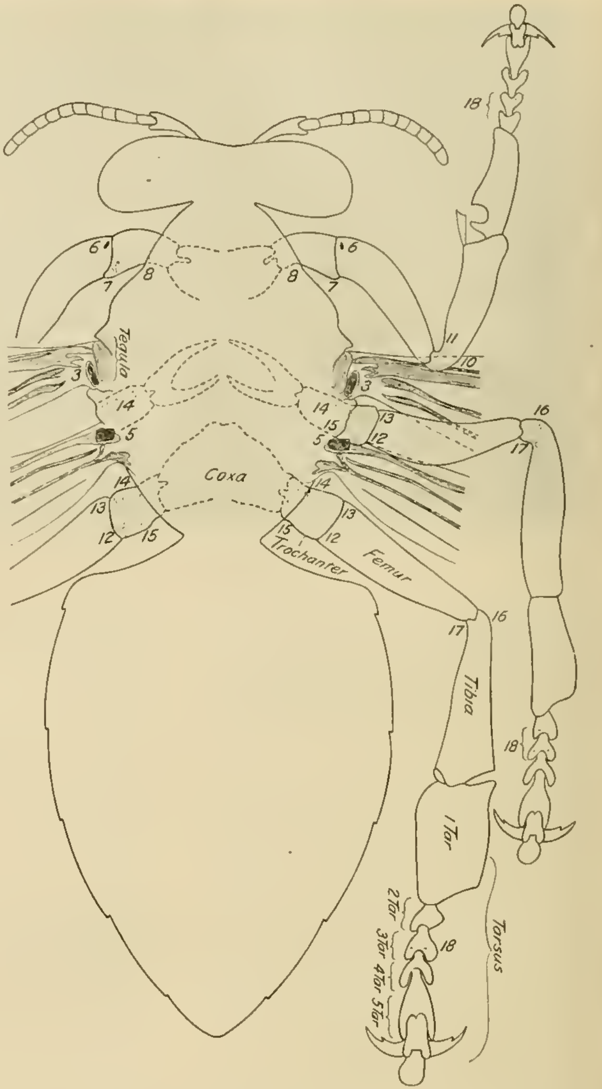


FIG. 2.—Dorsal view of a worker-bee, showing location of groups of olfactory organs as indicated by the numbers.

and this work is still being continued. This extract is taken from an 80-page paper which deals with the first two enumerated questions. Of the 24 figures given in this paper only 5 will be reproduced here.

Dugés, in 1838, was the first actually to try to prove that the olfactory organs lie in the antennæ. He cut off the antennæ of two male moths and then these insects were unable to find a female that they had previously been able to locate while their antennæ were uninjured. He also cut off the antennæ of many blow-flies, and then these flies were unable to find putrid meat as before. Dugés, like the later observers, failed to study sufficiently the behavior of his mutilated insects so that it could be compared with the behavior of unmutilated ones. The insects with amputated antennæ used by him certainly did not live long, and it is not reasonable to suppose that an animal, however low or high it may be, would go courting or hunt food when it has lost two appendages as important as the antennæ.

Since 1838, many observers have tried to prove experimentally that the organs of smell in all insects are located in the antennæ. Not until 1880 were scientists convinced that the olfactory organs really lie in these appendages. At this date appeared Hauser's large and comprehensive paper which seemingly settled all doubts on this subject. When we critically examine this paper, however, it is easily seen that his results are not infallible. Hauser studied the behavior of various insects before and after the removal of the antennæ. When these appendages were cut off many individuals soon became sick and died, although some of them lived thereafter for many days. In insects with the antennæ dipped into melted paraffin, the behavior was similar to that of those with the antennæ amputated.

After performing many experiments with a certain genus of beetles, he concluded that these insects lose the olfactory sense by the removal of the antennæ. Experiments with several other genera of insects gave the same results, but other beetles belonging to three genera gave less satisfactory results. These never completely failed to respond to strong-smelling substances. Experiments with Hemiptera (bugs) gave a still less favorable result. After the loss of the antennæ these insects reacted to odors almost as well as they did before their antennæ were amputated.

The following results were obtained by the writer. To study the behavior of bees and to test them with odors under conditions which permitted of their close observation, triangular cases were used. These were made of three narrow wooden strips, two of which were 10 and the third 6 inches long, each strip being half an inch thick. Cheesecloth served as a bottom and glass as a top for each case. Nine middle-aged workers, a queen, now and then one or more drones, a lump of candy, a small piece of comb, and a piece of cotton wet with water were put into each case. Thus confined, workers live on an average of 9 days and 3 hours, queens 16½ days, and drones 3 days and 9 hours. The following sources of odors were used: Essential oils of peppermint, thyme

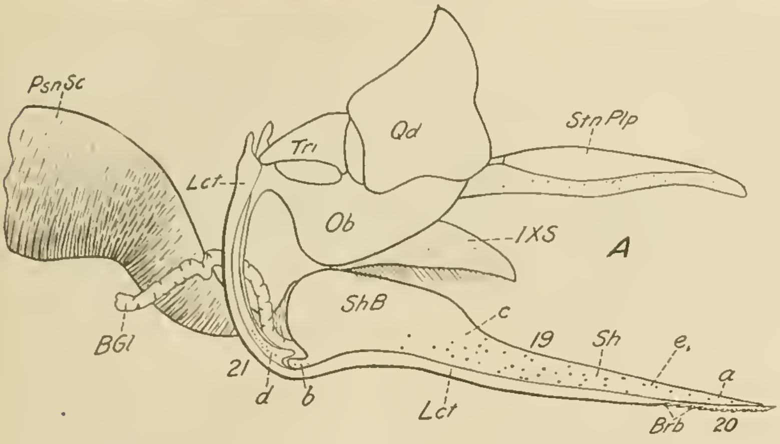


Fig. 3.—Side view of sting of a worker-bee with its accessory parts, showing location groups of olfactory organs as indicated by the numbers.

and wintergreen, honey and comb, pollen, flowers of honeysuckle, leaves and stems of pennyroyal, spearmint and sage, and bee stings. After testing many workers, queens and drones, with these odors it was found that they have an acute sense of smell. Drones smell slightly better than workers, and workers smell considerably better than queens.

To study the behavior of workers with mutilated antennæ, and to see if the antennæ carry the olfactory organs, the following experiments were performed: One antenna of each of many workers was pulled off. Thus mutilated bees are not entirely normal in behavior. They live only two-thirds as long as unmutilated ones, and seem to smell one-half as well as normal workers. Workers with one antenna pulled off and with two to eight joints of the other one cut off are still more abnormal in behavior and respond less slowly to odors. Workers with both antennæ pulled off, cut off, covered with shellac or celloidin are entirely abnormal in behavior and live less than one day. They fail to respond to all odors. The antennæ of 95 workers were burnt off with a red-hot needle. These workers were also abnormal and lived only 17 hours on an average. Seven of them which lived longest were tested with odors. They responded one-half as rapidly as normal workers. The antennæ of many workers were covered with liquid glue. Twenty-one were obtained which were fairly normal in behavior, but they lived only 24 hours on an average. They responded to odors practically as well as unmutilated workers.

From the preceding experiments it is evident that bees with mutilated antennæ are not normal, and that their slowness in responding to odors or their entire failure to react when tested is due to the injury caused by the mutilation. It seems, therefore, that the antennæ have nothing to do with the sense of smell. Since bees have an acute sense of smell, and as the antennæ do not carry the olfactory organs, we must look for them elsewhere.

A few years ago the writer described some organs found on the appendages of spiders. It was proved experimentally that these are olfactory organs. After failing to prove that the antennæ of bees carry the olfactory organs it was only natural to examine these insects to see if they have organs similar to the olfactory organs of spiders. At once the same organs were found.

Looking at Figs. 1, 2 and 3 it is easily seen where the olfactory organs are located. Groups 1 to 5 lie on the bases of the wings as indicated by the numbers. Groups 6 to 18 lie on the legs. Groups 19 to 21 lie on the sting (Fig. 3). The same organs are found on all mouthparts, but they are not discussed in this paper. The antennæ of the bee do not carry any of these organs.

Drones have an average number of 2604 olfactory organs, 606 which lie on all six legs and 1998 on all four wings. Workers have an average total number of 2268 olfactory organs, 100 of which lie on the sting, 658 on all six legs, and 1510 on all four wings. Queens have an average total number of 1860 olfactory organs, 100 of which lie on the sting, 450 on all six legs. and 1310 on all four wings. Those on the legs are rather large, but those on the wings and stings are quite small.

Under the microscope these organs appear as bright spots. At the first glance they resemble hair sockets (Fig. 4, PorApHr) from which the hairs have been pulled, but after a closer examination a striking difference is usually seen. Each bright spot is surrounded by a dark line, the pore wall (Figs. 4 and 5, PorW). Outside this line the chitin or "skin" (Fig. 4, PorB) may be light or dark in color, but inside the line the chitin (Figs. 4 and 5, ChL) is almost transparent, and at the center there is an opening, the pore aperture (Figs. 4 and 5, PorAp).

In order to study the internal anatomy of these organs, pieces of the appendages bearing the groups were "pickled" in a special fluid, and these pieces were cut crosswise into many extremely thin slices called sections. These sections were mounted on strips of glass, called microscopical slides,

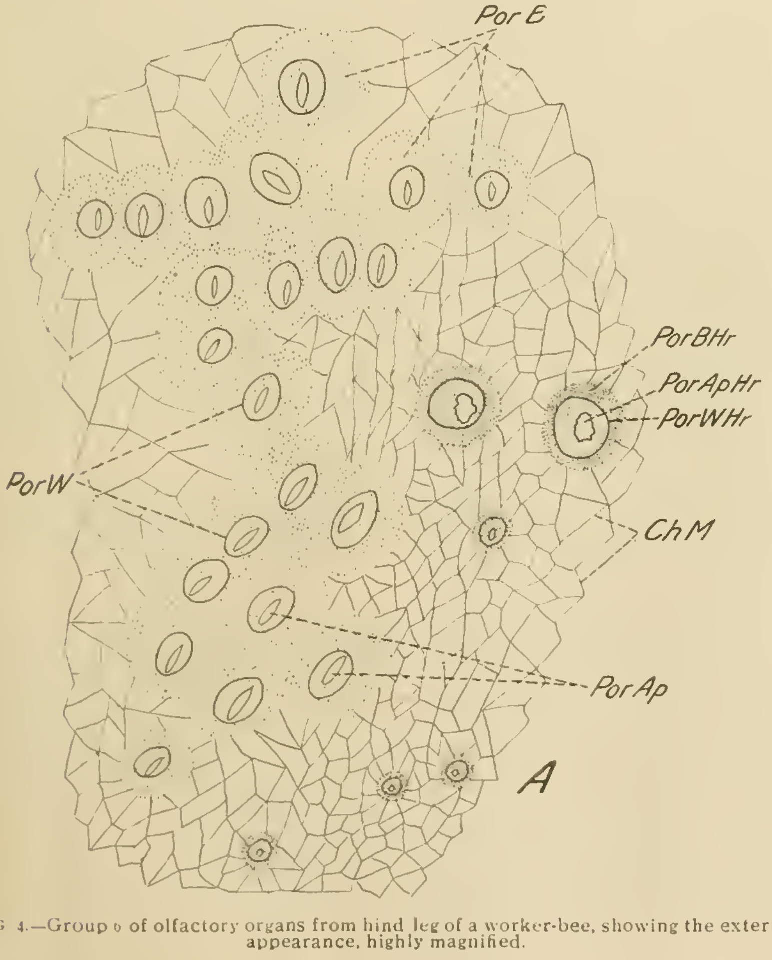


Fig 4.—Group 6 of olfactory organs from hind leg of a worker-bee, showing the external appearance, highly magnified.

and they were then stained with dyes. Looking at one of these stained sections under the microscope, one or more of the olfactory organs split open is always observed. From Fig. 5 it is seen that one of these organs is an inverted flask in the chitin (Ch). It has a wide neck (NkFl) and a flaring mouth (MFl), and its bottom is two-thirds filled with a hollow chitinous cone (Con). A sense cell (SC) lies just beneath the flask. Its outer end (SF) runs all the way to the opening (PorAp) in the chitin, and its inner end (NF) runs to the main nerve in the appendage. It is thus seen that the substance (Cyt) in the sense cell comes in direct contact with the air containing the odor, and odors do not have to pass through a hard membrane in order to stimulate the sense cells in the antennæ.

To determine the function of these organs the wings, legs and stings of many workers were mutilated. The behavior of the mutilated bees was carefully studied, and they were tested with odors in the same manner as already described. The stings of 100 workers were pulled out. These bees lived 30 hours on an average. Twenty of them were tested with odors. They responded only slightly, more slowly than unmutilated bees. The wings of 28 workers were pulled off. When tested with odors, these bees responded one-eighth as rapidly as normal bees. The bases of the wings of 20 workers were covered with glue. When tested, these bees responded also one-eighth as rapidly as normal bees. The organs on the legs of 20 workers were covered with a mixture of beeswax and vaseline. When tested, these bees responded two-fifths as rapidly as unmutilated workers. The wings were pulled off and the organs on the legs of 20 workers were covered with the beeswax-vaseline mixture. When tested with odors these workers responded one-twelfth as rapidly as unmutilated workers. All of the workers with mutilated wings and legs lived just as long in the observation cases as did unmutilated workers, and they were absolutely normal in all respects except they reacted to odors more slowly.

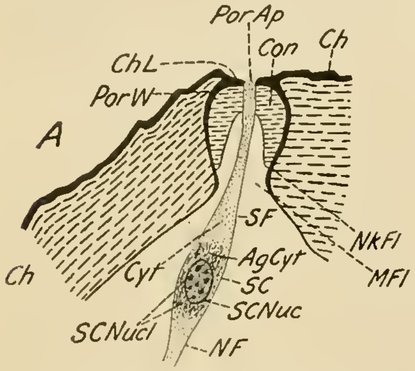


Fig. 5.—Cross section of a typical olfactory organ from group 10, showing the internal anatomy, highly magnified.

Judging from the anatomy of these organs, and from the preceding experiments it is only reasonable to regard these structures as the olfactory organs in the honey-bee. The writer has also made a special study of these organs in ants, wasps and hornets, and the conclusions obtained from this study confirm the above view. These organs are common to all insects, while the antennal organs differ much in structure, and no one kind of them is common to all insects.

The view that the antennæ carry the olfactory organs held so long by beekeepers and scientists must, therefore, be abandoned judging from these investigations.

Washington, D. C.

The Marking of the Queens

BY DR. BRUNNICH.

About 10 years ago I marked my queens with a mixture of glue of isinglass and color, but I was not contented with the results. The odor of this glue was very disagreeable, and the bees certainly detested it as well as I. It required several minutes for the glue to dry, and it was not possible to give a nice mark to a queen. Holding the marking of queens a very valuable thing, I was therefore glad, when, in a convention of the Swiss bee-breeders, a friend of mine gave us a better method, which I will describe at once. In a cup of porcelain I grind some *color powder* (a teaspoonful), adding by little and little some good lacquer until the consistency is half liquid. It is a matter of experience to get the best consistency; at all events the lacquer must *not be too thick*, because then the marking is impossible and does not remain.

To give the mark of color to a queen, I always hold her by the wings in my left hand and let her take hold on a table. With a little instrument, which consists of a thread-like wire which is bent one-sixteenth inch at the point at an angle of about 45 degrees, I make my marks on the thorax. With this little instrument I am able to make a great number of very different marks. Sometimes I give *one point*, two, three, or four points, a longitudinal *bar*, a transversal one or oblique one, or I combine those bars with one or two points; sometimes I make a *cross* in two different positions; sometimes a H or a U, etc. With the colors *I vary every year ; white* (not very good), *red* and *yellow* (excellent colors), *green*. I never tried blue, silver, or golden bronze. Every four years the same colors come again. If the marks are well made, they may remain clearly for four years.

The *advantages* of the markings are various and considerable. How easily a queen with a bright mark may be recognized from a great distance, and how agreeable it is to seek such a queen! It is a very valuable thing, if a queen has to be superseded by a young one; only if a queen is well marked may I be absolutely sure that the superseding has succeded.

I know from a large experience that many a beekeeper believes the superseding a success, while it was another young queen bred from the bees of the hive which deceived the beekeeper. Even *clipping* is not sure, because it may happen that the wings are injured in a manner that it may seem as if the wing had been clipped. I am very mistrustful when the excellent results of any new method of superseding are praised by the beekeepers. I think I have tried all methods (always with *colored* queens), and have seen that *every* method gives a failure under certain circumstances, even if performed with all precautions. Often the hive will not be looked after in three or four weeks, and of course a young queen will have brood in all stages, and the happy bee-man is proud of his success.

The marking of queens, bees and drones has given me a great many very interesting experiences. Often I saw, at my mating stations, that a queen was not in her own nucleus, but in a strange one; she had flown into the false hole and had been kindly accepted. Once I had an excess of queen-cells in a dequeened colony in my bee-house. When I came to take the cells they had disappeared; but instead of them I saw a young fertile queen. Noticing the colored mark on her back, I immediately recognized a queen which had been before in a not very distant nucleus, where now she was no longer to be found. Similar examples I have often seen. It is a nice thing, which I have often observed, to see in a hive an old queen with her mark, and not far from her her daughter with a different colored mark. For knowing exactly the *age* of a queen there is no other means than a good marking. I have sometimes read of queens 6 years old. I, for my part, am distrustful of such statements, having never seen a queen older than 4 years.

Sometimes nice things may be observed by marking young bees. We may then exactly know their age, when they fetch pollen, honey or water. Once I saw a bee which fetched wax from a little lump lying aside; quickly I marked it with yellow color, and could then observe for some days the same bee fetch from that wax. My son and I have marked quite differently a number of water-carrying bees and then noted the time of their sucking and the time they needed to bring the water home, etc. For the exploration of certain scientific questions the marking of the bee is quite an indispensable matter.

Zug, Switzerland.

European Foulbrood at Dr. Miller's

BY DR. C. C. MILLER.

In the season of 1913, I had 24 cases of European foulbrood in my apiary. Almost all of them were very light; I think none would be called very bad; but if a single diseased cell was found in a colony, that colony was called a "case." As there were 83 colonies, spring count, that made 29 percent of them affected.

The first case was spotted April 22; 15 cases were found at different times in May; and the balance in June, the last being June 18. Whenever a case was found, it was marked in red ink in the regular record-book, and any en-

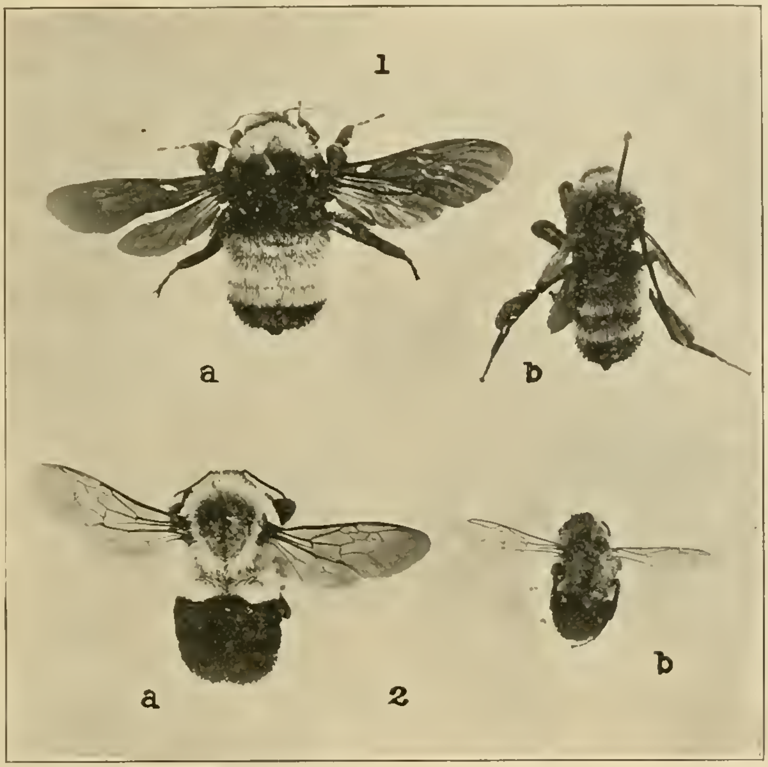


Fig. 1.—Two common bumblebees. 1. Bombus americanorum; *a*, female, *b*, worker. 2. Bombus impatiens; *a*, female, *b*, male. (See next page.)

try made at any time referring in any way to the disease was marked with red. That made it easy to tell at a glance whether any colony was affected, and what pertained to the disease without having to read over the whole record.

HOW EUROPEAN FOULBROOD WAS TREATED.

June 2 and June 10 were the dates on which nearly all the cases were treated. The treatment was simple. As the cases were mild and the queens good, there was no need to destroy or remove any of the queens. (In very bad cases it is better to destroy the queen. Not that the queen herself has the disease, but she has become poor, perhaps because of having lived in such a bad atmosphere. In mild cases she is not affected.) In all but a few cases the queen was caged in the hive for 8 or 10 days, and then fed. That's all there was of the treatment; just stopping the queen from laying for 8 or 10 days. Possibly a week would be long enough, but I wanted to be on the safe side.

In the remaining cases the queen was allowed to remain without being caged. In four cases, in the middle of the day or a little earlier, all the brood and adhering bees were *quietly* removed (and put elsewhere in an upper story over an excluder), clean brood from elsewhere was given to the queen, allowing the returning field-bees to care for the brood. That was all the treatment they received. The nurse-bees had been quietly removed so they would not be made to fly and return to the hive, the field-bees had no foul food for the babies, and could get none from the clean brood, so there was nothing to continue the disease. This plan allowed the queen to continue laying, but taking away all the younger bees stood over against that, and caging the queen is less trouble.

In two cases the treatment was simpler than the last given. All the brood, with adhering bees, was put in an upper story over an excluder, and the queen was left downstairs to start a new brood-nest. If this plan should prove generally successful, as it did in these two cases (one of them was, I think, the worst case in the apiary), it may be the best plan to use with extracting colonies. It has the advantage that it is nothing more nor less than the Demaree plan to prevent swarming. For section work the caging plan is all right for mild cases. For severe cases the queen should be killed and replaced after 8 or 10 days by a vigorous laying queen of best Italian stock. Still better it may be to introduce a ripe cell or just hatched virgin at the time of removing the old queen.

One thing that has not been mentioned should be strongly emphasized: *In all cases treated the colony was strong or else made strong before treatment by the addition of brood and bees.*

FOLLY OF DESTROYING COMBS.

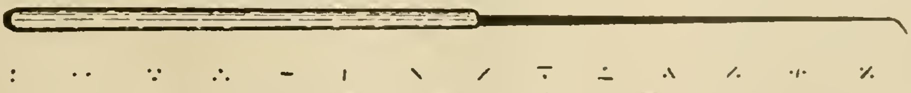
I know there are those for whom I have great respect who have bitterly denounced the practice of trying to save the combs in treating European foulbrood. In my first dealing with the disease I destroyed hundreds of brood-combs. If I am forgiven for it I'll never do it again. Please be sure to note that I'm talking about European, not American foulbrood. The loss of the combs is not all there is of it. Indeed, I think that's the smaller part. The greater loss is from the set-back in the work of brood-rearing. It seems to knock things endways for weeks if not for the season. Far less is the interference when egg laying is suspended for 8 or 10 days.

I think I hear some one say, "But your treatment doesn't seem effective, for you keep on having the disease, while with the orthodox treatment and the combs destroyed there's an end of it." Pardon me; that may be true with regard to American, but not as to European. I treated the disease after the most approved orthodox fashion, destroying, as I have said, hundreds of combs, and so far as I could see the disease was just as willing to return as with the less drastic treatment. I think I'd rather keep brood and combs.

EFFECT OF EUROPEAN FOULBROOD ON THE HONEY CROP.

Some curiosity has been expressed to know what effect the disease had upon the 1913 honey crop. Is not the fact that the apiary holds the world's record for the largest average of sections (266.47 per colony) from so large a number as 72 colonies enough to show that European foulbrood did not greatly interfere with the crop? But it may be more satisfactory to go into particulars.

Part of the diseased colonies worked on extracting combs, and no account was kept of their work; we can consider only the 17 that worked on sections. These 17 averaged 232.29 sections each. And now I'm just a little at a loss to know how to figure. There were 72 colonies, spring count, that worked on sections, but another colony was made out of these 72, making 73. I don't know whether to take 17 out of the 72, leaving 55, or out of 73, leaving 56, or take some other number as the number of entirely healthy colonies to which credit should be given for the rest of the sections. If we take 55, then the average for the healthy colonies was 277. If we take 56, then the average was 272.1. Even this smaller number is 39.81 more than the average of the diseased colonies. If this difference be wholly due to the disease, then the average of the 72 would have been at least 272.1 instead of 266.47, and a loss of 676 out of the total crop should be charged up against European foulbrood. That may or may not be right, but it certainly looks as if something should be charged up against the disease, even though it was mild. And it is a consoling thought to know that the disease can be so kept down.



Dr. Brunnich's Queen Marking Tool and Marks.

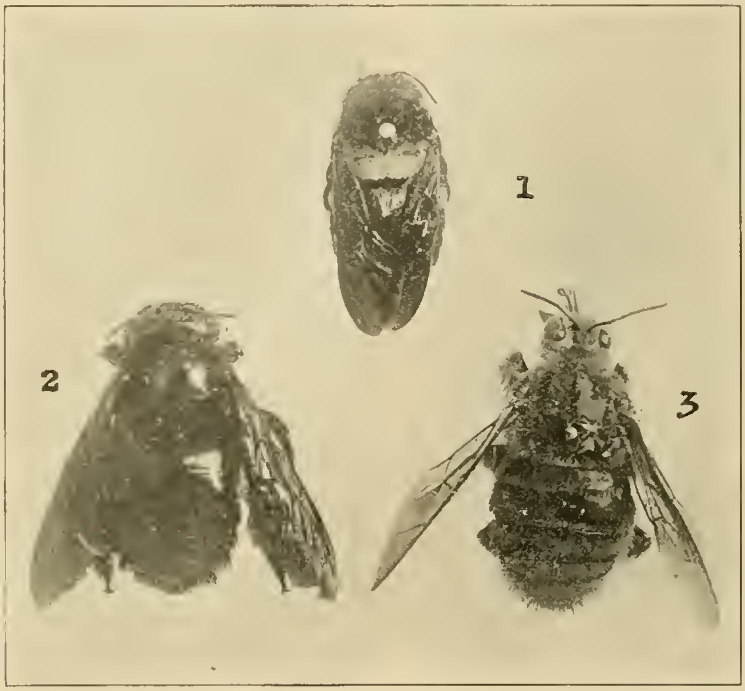


Fig. 2.—Three carpenter bees. 1. Xylocopa caffra, Cape Colony. 2. X. fimbriata Nicaragua. 3. X. conjuncta, Africa.

Three of the diseased colonies gave respectively 305, 326, and 336 sections. The poorest gave 112 sections. The poorest of the healthy colonies gave 68 sections, showing that there are worse things than foulbrood. In this case I think it was "pure cussedness." Number 39 began by killing its own queen the last of May, and killed everything in the line of a queen given to it up to Sept. 1, when it accepted a virgin. I used the politest and best forms of introduction I knew, including Arthur C. Miller's smoke plan, but all was no use.

Marengo, Ill.

Our Wild Bees

BY JOHN H. LOVELL.

FEW beekeepers know much about our wild bees, yet they play a most important part in the pollination of both wild and cultivated plants, the pollen and nectar of which our domestic bees are compelled to share with them. Our younger beekeepers, both boys and girls, would find it well worth their while to collect and study the wild species of their neighborhood. By exchanging and corresponding with each other this work might be made intensely interesting; and much practical information would be obtained. When Darwin was at Good Success Bay, Terra del Fuego, he wrote home that he thought he could not employ his life better than by adding a little to Natural Science. But it is not necessary to go to the antipodes for this purpose; you can find an ample field for investigation near your own home, for the wild bees of this country are fairly well known in only a very few localities.

Some 8000 species have been described throughout the world, of which 2000 belong to Europe, and an equal number to North America. There are about 200 species in England, 400 in Germany, while in the warmer climate of Algeria there are 413. In southern Maine there are not far from 135 species, while Hamilton, Ill., the home of the American Bee Journal, could probably furnish 250 species. The wild bees of the southern States are almost wholly unknown, and the information available in regard to the bee fauna of many northern States is exceedingly scanty.

The wild bees are now classified into families, in the same manner as plants, but for the purpose of this journal we shall follow an older division of them into two great series called the long-tongued bees and the short-tongued bees. The latter is the older group, and as flowers with the nectar deeply concealed were gradually developed, the long-tongued bees were evolved *pari passu* (with equal pace).

Of our native long-tongued bees no genus is more familiar to every one than the bumblebees. They are sometimes called humblebees, but their cheerful boom well deserves the sonorous term Bombus or bumblebee. The common American bumblebee (Bombus americanorum, Fig. 1) has a tongue 14 millimeters long, or more than twice as long as that of the honey-bee (6 mm.). The following lines by Emerson well describe the economy of species:

"Hot midsummer's petted crone,
Sweet to me thy drowsy tone
Tells of countless summer hours,
Long days and solid banks of flowers.

Wiser far than human seer,
Yellow-breeched philosopher!

When the fierce northwestern blast
Cools sea and land so far and fast,
Thou already slumberest deep;
Woe and want thou canst outsleep."

There are many flowers which are adapted to pollination by bumblebees, and are hence called bumblebee flowers. This is true of no other genus of bees. Common bumblebee flowers in gardens are the columbines, larkspurs, monkshoods and snapdragons; while the turtlehead, butter and eggs, gentian and red clover flourish in the meadows. I once placed several flower-clusters of white turtlehead about 4 feet in front of a bee-hive; the honey-bees ignored the flowers entirely, but presently the bumblebees found them and one of them visited every flower.

Bumblebees are social insects during the warmer half of the year, but only the impregnated queens survive the winter and are on the wing in the spring. All of the other wild bees indigenous to the northern States are solitary insects; each female, as a rule, constructing her own nest and stock-

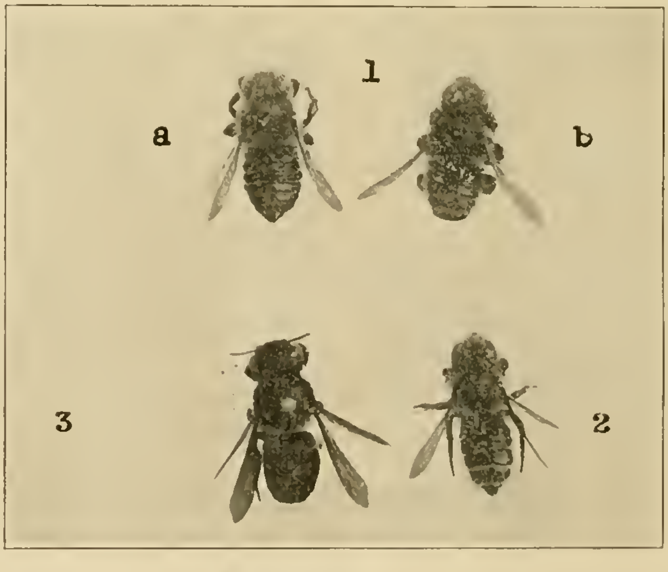


Fig. 3.—Leaf-cutting bees. 1. Megachile latimanus; *a*, female; *b*, male, New England. 2. M. vidua, female, New England. 3. M. atriceps, female, Cuba.

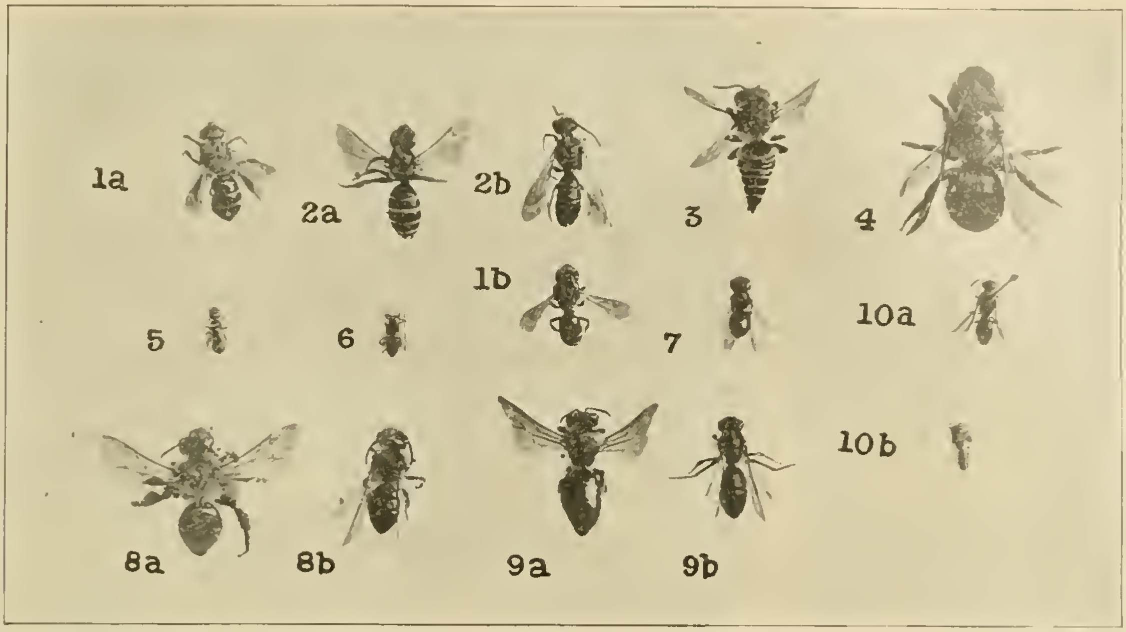


FIG. 4.—Common bees of the northern States. 1. Halictus craterus; *a*, female; *b*, male. 2. H. lerouxii; *a*, female; *b*, male. 3. Coelioxys rufitarsis, female. 4. Osmia megacephala, female. 5. Halictus hortensis, female. 6 H. vierecki, female. 7. Osmia pumila, female. 8. Andrena vicina; *a*, female; *b*, male, 9. A. cratægi; *a*, female; *b*, female. 10. Prosopis modesta; *a*, female; *b*, male.

ing it with food. The largest of all bees are the carpenter bees (Fig. 3), so-called because they are able with their powerful jaws to excavate tunnels in solid wood a foot in length. The cells are separated by partitions of small chips cemented together in a spiral; while the masses of bee-bread, or balls of pollen mixed with nectar on which the eggs are laid are about the size of a bean. In the eastern States Xylocopa virginica, a black bee about the size of X. caffra (Fig. 3, 1), is a well known species.

In Fig. 3 are shown three kinds of leaf-cutting bees. They carry pollen chiefly on a stiff brush of hairs on the underside of the abdomen, which in different species is black, yellow, or glistening white. On level-topped flowers, like the sunflower, they are able to suck nectar and brush up pollen at the same time. They are also especially well adapted to pollinate the flowers of the pea or legume family (Leguminosæ).

The species of Megachile are called leaf-cutting bees because they line their burrows with oblong or round pieces of leaves or flower petals, which they cut out with their mandibles. Usually they do little harm to the foliage of plants, but occasionally the injury is more serious. A settler at Springfield, Idaho, relates the following experience:

"Among the first trees set out about our house were two ash trees. As soon as the foliage began to appear the trees were attacked by leaf-cutter bees, which completely defoliated one and nearly the other. First, we noticed circular holes in many of the leaves, but it was not long, until going to the trees, one noticed the noise made by the bees at work, almost like a swarm of bees intent on gathering honey. Sometimes we could see a bee with a section of leaf so large it could hardly fly, but working diligently, carrying its burden to a sandy spot just outside the yard, where the bees had their tunnels."

The mason bees belong to the genus Osmia (See Fig. 4, 4 and 7), and are closely allied to the leaf-cutters. They are robust, blue-green or bottle-green insects, with the pollen brush on the underside of the abdomen. They are called mason bees because many of them construct their cells of mud or clay. A cell sent to me from Massachusetts, was a round ball about half an inch in diameter, rudely fashioned of mud on the outside, but beautifully polished and glazed within.

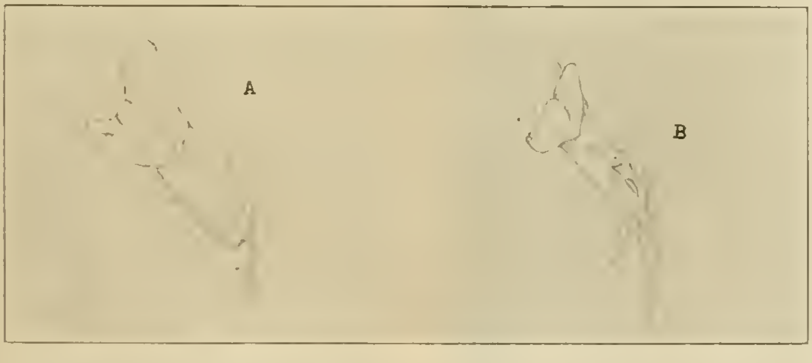


FIG. 5.—Two closed bumblebee flowers. *A*. Snapdragon Antirrhinum majus). *B* Butter and-eggs Linaria vulgaris. In both species the corolla is two-lipped Notice how the closed corolla protects both the nectar and the pollen from wet and useless insects. Bumblebees alone can push down the lower lip and enter the corolla.

The short-tongued bees are very numerous, and may be taken by the dozen on flowers which have the nectar and pollen unprotected, as the willows, plums, wild cherries, thornbushes, blackberries and sumacs. In Fig. 4 are shown common species of the great genera Andrena and Halictus. As they build their nests in the soil of fields and pastures they are often called ground bees. Each female digs her own burrow, and, as many thousand sometimes tunnel in the same sandy bank, the ground appears as though filled with shot holes. It is a village or "city of homes." The tunnel is straight with several short branches, in each of which a ball of bee-bread about the size of a small pea is placed, an egg is laid upon it, the cell is sealed and the offspring are then left to take care of themselves. When it is rainy the females remain at home, and may be seen looking out of the burrows watching for fair weather. A part of the species of Andrena fly only in the spring, and others only in late summer or autumn. Many of them are found on only one kind of flower, some very common species like the willows or goldenrods, which furnish all the pollen and nectar they require.

The simplest and most primitive bees belong to the genus Prosopis (Fig. 4; 10, *a* and *b*). They are little coal-black insects with an aromatic odor, resembling ants in general appearance. They are nearly smooth, with broad, flat, wasp-like tongues, which suggests that they have been derived from the wasps. It is a far cry indeed from Prosopis to the honey-bee.

The wild bees play a very important part in the pollination of many plants both in nature and under cultivation. For thousands of years our American flora was visited by no other bees than the wild species; for the honey-bee was not found in the Western Continent at the time of its discovery, but was introduced later by the early settlers. "The Indians," says Washington Irving, "consider them (honey-bees) as the harbinger of the white man, as the buffalo is of the red man, and say that in proportion as the bee advances the Indian and the buffalo retire. It is said * * * that they have always been the heralds of civilization, preceding it as it advanced from the Atlantic borders."

(I trust that some of the younger readers of this paper will begin by making a collection of the wild bees in their locality the coming season; but before doing so they should write to their State Experiment Station and learn how to collect, pin and label their specimens).

Waldoboro, Maine.

My Florida Visit

BY HARRY LATHROP.

BEFORE leaving for Florida, I had written Mr. Wilder to look out for a camping place for me and a few old tin cans. as I would be only "a tin can tourist." It was with much disappointment that I learned, on my arrival at Bradentown, that Mr. Wilder had gone to his headquarters in Georgia on account of the death of his general foreman. I did not see him at all. Attached is a picture of my camp. Perhaps he can tell where it is? I had several informal visits with A. I. Root; also met Ernest when he was down. Herbert Clute, whom I knew when he had an apiary at Greenwood, Wis., lives at Palmetto, where he is doing well with about 300 colonies of bees. I had a nice visit with him and his good wife. Herbert has traveled over every part of the State. He says the beekeeping territory lies in narrow strips around lakes and bays, and at certain local points. While one can do well in beekeeping in Florida, it was my impression that the States bordering on Lake Michigan are far better territory.

Florida, to the northern man, is a great botanical garden, a wonder land full of beauty, such as he had never dreamed of because so different from northern scenery. It will pay any beekeeper to make the trip, and once he has seen it he will want to go again. I had some nice times fishing and boating, but most of the time I spent among the truck farms and in the forest, trying to learn all I could about soils, plant growth, timber, fruit and vegetables. I was informed they had been picking strawberries since Christmas, and the quality was as good as the best we can produce. All the vegetables were of excellent quality. I reveled in sweet, luscious oranges; but I learned one thing, that everybody will have apples. I bought some in spite of the fact that I had so many other kinds of fruit. The apples supplied were from the far distant State of Washington. It would appear that some of the central States could do as well producing apples to supply these markets as the Florida growers do in citrus fruits. Go where you will, the apple is the king of all fruits.

We arrived back home April 1, and found the bees in good condition in the cellar. It was on my arrival at home that I learned of the death of F. B. Cavanagh. It gave me a sad heart. While we did not agree as to the price of honey, I loved him from the first time I saw him, and esteemed him highly. He was an honor to the industry of beekeeping, and will be missed at our gatherings.

Bridgeport, Wis.

Harry Lathrop in Camp in Florida.

Tunis or Punic Bees?

BY A. LENOEL.

IT is a rash enterprise to fight fashion, whether in ladies' hats, horses or honey-bees. The *golden* bee is fashionable. That is a fact. It has the color and the name, but, all considered, does not the pure black bee bring more *gold* to its owner? That is an interesting question which may bring jests first, then criticisms, but perhaps afterwards compliments.

I do not propose to tire the reader with lengthy articles, but hope to be able to discuss the following points in different numbers of this journal:

1. Replies to criticism of the Punic bee.
2. Its origin and habits.
3. Its culture by the natives. Its purity. Its faults.
4. Transformation from the native culture to modern methods.
5. Comparative study of the race with the Italian and others.
6. The future of the Punic bee as regards honey, beeswax and queen production.

Transporting Arabian Hives of Bees in Tunis.

The Punic bee is the common black bee. But living in a country where it has not been subject to mismating, it is purer, more resistant, and more industrious than the common bee of the continent. The following faults are mentioned against it:

She is small. She is cross. She swarms too much. She builds too little comb.

She is small, yes. That is due to the fact that the Arabs never change her combs. The cell walls are reduced at every hatching, and the development of the bee is cramped. The careful beekeeper helps increase the size of his bees by judicious renewal of the combs.

She is cross. That happens only with unskillful handling. The Arab, three-fourths naked, works with his bees without care and without accidents; the apiaries of the settlers are usually located near the door of the

Queen-Rearing Apiary of Mr. Lenoel, in Mabeul, Tunis.

home; the bees make much noise, but give trouble to neither man nor beast.

She swarms too much. That is because the hives are both too shallow and too narrow. They swarm because they are too numerous for their abode. They multiply very fast.

She builds too little comb. If she really swarms too much it is evident that she must build combs rapidly, for the one cannot go without the other. It is easy to find fault. But I hope, in the last of my articles, to show her good points. Meanwhile, I trust the readers will peruse in an impartial spirit what I will have to say further upon this important question.

Nabeul, Tunis.

[Mr. Lenoel, the writer of the above, comes to us well recommended. It is a hard task to fight for an already condemned cause. We bespeak for him courteous consideration.—Editor.]

String Splints

BY DR. A. F. BONNEY.

I AM NOT surprised that Dr. Miller makes some guesses (page 161) about my string splints, but I am that he should pass on the matter without a trial, and I trust the Editor of the Old Reliable will let me have a final say.

Dr. Miller is not the only one whom splints have not satisfied entirely. I have yet to see the beekeeper who was satisfied with them, and I am sarcastic enough to suggest that Dr. Miller might not have been had he not invented them. I know *I* have clung to awkward things because I invented them; but I am a stubborn sort of a brute, to say the least. The Doctor confesses that sometimes they "make a gap of an inch or so in the foundation." With five splints, as I have strings, there would be little foundation or comb left.

Note that the splint is imbedded in the foundation while the string merely lays in contact with it, or barely touches it. Whether the splint is boiled in wax or not the bees often try to take it away. The few splints I used were fine broom straws straightened by soaking, then weighted at one end and dried. I also split bamboo, which gave a hard, tough fiber not much larger than a thread. This idea I got from Mr. Edison's electric light filament experiments.

Dr. Miller is a good guesser. I do not know how much the fuzziness of the string was resented by the bees, but the string was removed *before* the foundation was fully drawn out, as I *expected* it to be. However, it had supported the foundation until enough comb had been built to keep it in place.

The strings were saturated with wax. How could they help being when melted wax was poured over them? A cheap string is better than one made of long staple cotton, as it is easier to remove.

A thing must not be condemned without trial. These string "splints," let me explain, are used *as a temporary support*. My frames are wired for permanent support. While "actual trial *may* show less trouble with strings than imagined," it may also show that it is an ideal way to support combs. I find it so. There is no gnawing away of foundation. The closest scrutiny fails to show that the comb had been artificially supported. I expect this season to try a hundred new frames with strings alone. If they fail me I shall make chunk honey out of the combs.

The careful experimenter this summer will put a frame in the hive with medium foundation, one with light, two more with wires, two with strings, and two more with both wires and strings, and keep the hive hot. But not one person in a hundred can carry an experiment to a logical conclusion. Dr. Miller can, and I can—sometimes.

Buck Grove, Iowa.

No. 3.—Doubling the Yield of Surplus Honey

BY G. C. GREINER.

THE success of the season's campaign depends in a great measure upon spring management. It paves the way, as we might say, for future operations. Some of the advantages of my method, outside of heavier yield, are directly due to the preparations and treatments our bees receive before the honey-flows are expected. A description of my method would not be complete without a description of preparing them for the harvest. I will, therefore, give a few stray thoughts concerning my spring management.

To produce doubled and trebled yields, your first aim must be to control swarming. (This is one of the inci-

A Tunis Arabian Apiary. The Hives are Covered With Grass and Reeds. Photograph of A. Lenoel.

dental advantages my method brings about.) We all know, if bees do not swarm and apply all their energy to the production of surplus honey, the yields under favorable conditions may be enormous. At the same time, if we can keep our bees busy, gathering and storing honey, not capping, they are not liable to swarm. These two features are so closely linked together that either one may be considered the cause of the other.

My apiary, after the bees are placed on the summer stands, usually consists of these three classes: Prime, medium and weak, and I believe the same is the case with every lot of bees at this time of the year. The only difference that may exist is the proportion of the three classes. With one beekeeper, who has the wintering problem at his fingers' end, the first kind may be in evidence, while with a less fortunate brother, the other end of the line may be predominating, but in either case the three kinds are there just the same.

All the colonies that are strong in bees, and have six or more combs of solid brood are classed "prime." Any of these are liable to swarm during the latter part of May. To prevent it they are divided during apple-tree bloom (in this locality about May 10 or 12), the queenless half being provided with a laying queen. In the way of making these divisions, I have nothing new to offer. I practice the old-fashion method of taking the old queen with two combs of brood from the mother colony, place them in a new hive on the old stand, and move the former with a caged laying queen to a new stand. If the operation is properly performed it is the simplest, most convenient, and most workmanlike method of making artificial divisions. The advantages of doing it at this early period are easily explained. No other apiary work is crowding. The beekeeper has plenty of time to execute every detail with care and forethought, while a month or two later the same work would necessarily have to be slighted. The divided colonies, too, have plenty of time to recuperate. Each half has the opportunity to build up to proper working condition before the white-clover flow begins.

I have no trouble with swarming. I am relieved of all the time-wasting useless operations in the line of hunting and destroying queen-cells, clipping queens' wings, which I imagine is the cause of many queens being injured, shook swarming, in itself an unpleasant job, greatly interfering with super work, etc. All these manipulations are pulling at the wrong end of the rope. Instead of removing the cause, they are expected to prevent the effect. It is not the presence of queen-cells, but the disposition to build them, that induces swarming. Cutting them out does no more remove the desire to swarm than clipping the queens' wings.

At the time the divisions are made, all vacant space in the hives is taken up by chaff division-boards, dummies, fillers, or whatever they may be called. The hives that contain the old queens are reduced to five frames; one comb of honey and two empty combs being added to the two combs of brood taken from the mother colonies. The space of the two combs taken from the latter is also taken up in the same way. To make these changes convenient, the division-boards I use conform to my rule of uniformity. Shorter in length, they are cushioned at the ends to fit against the end boards of the hives; but in thickness they take up the same space as the brood-frames, so that eight, the number of frames I use, just fill the hive. Whenever it is desirable to change from one to the other, the same number of one will fill the space of any number of the other.

As soon as the old queen has started brood-rearing in the two empty combs, I exchange one of the division-boards for an empty comb, the latter being placed in the center of the brood-nest. A little later, according to the progress of brood in this added comb, another division-board is exchanged in like manner, and still later the third one is exchanged. With a vigorous healthy queen (we should have no other), this treatment results as a rule in a hive full of brood and bees by the time the white-clover flow begins, and if bees are then supplied with the necessary empty combs (extracting supers), we can expect rapid storing.

The removed mother colonies are treated practically in the same way. The spaces of the two combs of brood taken with the queen are taken up by division-boards, which are placed on the outside of the remaining combs. It takes a little longer before the introduced queens are accepted and laying, but whenever this takes place, the changes are made, the same as with the other colonies. From these colonies the comb-honey producers are selected; having all young queens, they are less liable to swarm.

As soon as the season permits, the other two classes, medium and weak, are reduced to as few combs as they can occupy to advantage. With the advancing season, and according to their progress, the former are served in the same way as the divided halves of the prime colonies, and as a rule, they are in fine shape for surplus work, when the flow begins. If any are a little slow to take their supers, the equalizing method, as described before, brings them up to the desired condition. Many of these colonies produce as much surplus honey as any of the divided ones; in fact, they frequently excel some of the less ambitious ones of the latter.

The third class, the weak ones, I consider of little account. Although I nurse them up as their condition may dictate, I do not spend a great deal of time with them. I generally unite the better ones, those that promise any returns at all, when the flow is on, or, for experimental purposes, exchange them with some of the mediums during the forepart of the season. Uncertain and unprofitable as these efforts may seem at the beginning, I frequently take surprising yields from these invalids before the season is over.

Since writing the foregoing it occurred to me that a brief detail of making artificial divisions as I practice it, might be a help to some young beekeeping friend who would like to try my method.

First, some general rules: Handle bees very quietly and slowly, and prevent all cracking and snapping as much as possible, when manipulating a hive. It is the jarring and quick motion that irritates them. There is no such thing as cross bees or cross strains in my experience except in very rare cases. Rough and careless handling will turn the most gentle bees into furies.

Always have your smoker ready for action within easy reach, but use as little smoke as possible.

Be master of the situation at all times. Never allow your bees to become uneasy. A very few puffs of smoke over (not between) the frames will keep them quiet, if administered at the right time.

Shaking bees on the ground in front of the hive removes all their disposition to fight. The same holds good after a comb is taken out of the hive. It can be leisurely examined without any objection on the part of the adhering bees.

Use a bee-veil or have one on your hat ready to use. Although I have not used one in 5 or 10 years, I would advise the beginner not to be without it. Its use produces a certain feeling of safety that greatly assists in quietly handling our pets, especially when queens are dealt with.

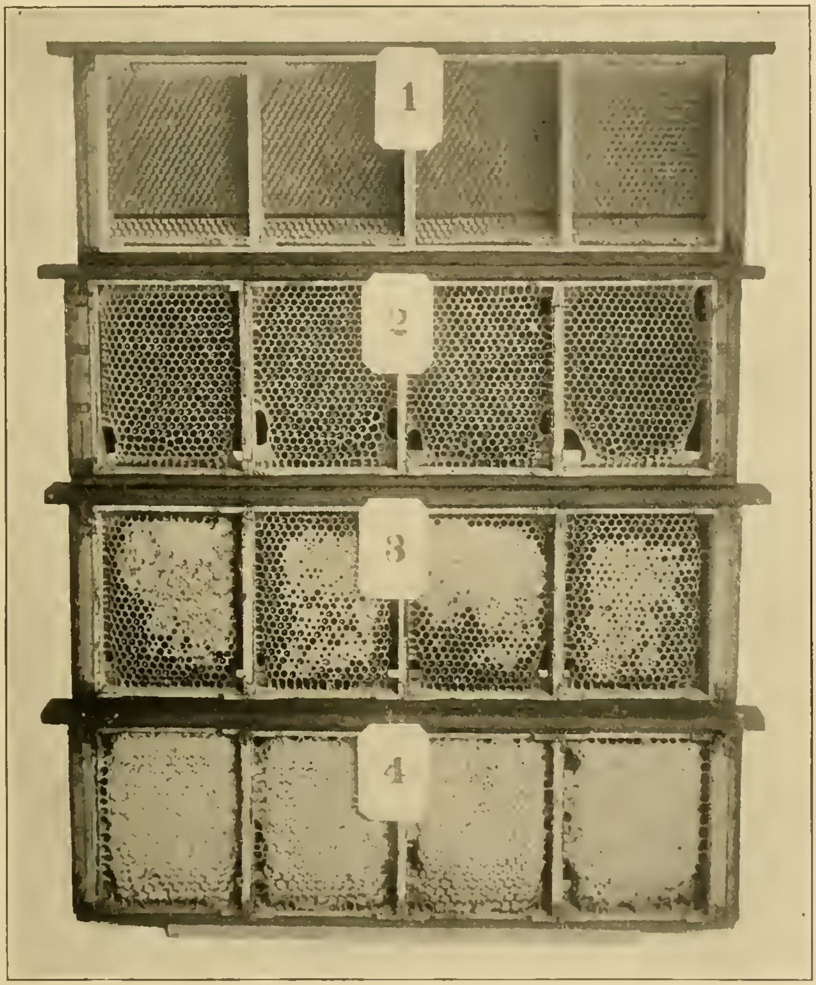
Prepare a new hive with three division-boards and two empty combs, leaving space for three combs in the center. Place it behind the colony to be divided. Loosen the cover of the latter on your side very carefully. If bees emerge, a little smoke will drive them back, and the cover may be replaced for a few seconds to let the bees get quiet again. Take off the cover in a slow, quiet way and give it an endwise jar on the ground, close to the hive-entrance to drop the adhering bees. With hive-tool (pocket screwdriver) loosen and move the third frame towards the center as much as bee-space will permit without squeezing the bees. Serve second frame in like manner. This will give the first comb plenty of room to be taken out without rolling bees against the adjoining comb. Look it over carefully for the queen. If the operation is performed during the middle of the day, she may be on this very comb. In either case place it in the new hive next the division-board. Take out the second comb and look it over like the first.

If the queen is not on this comb, and it contains mostly young, uncapped brood, place it as second comb in the new hive also, otherwise let it take the place of the first comb taken from the mother colony. Take out and examine the third and all the following combs until the queen is found, when she is placed with the comb and adhering bees into the new hive, and the latter closed. In case the second comb remained in the old hive another comb of brood, preferably young brood, must be transferred to the new hive.

All the remaining combs in the mother colony should be moved to one side, allowing a little more than bee-space in the center for the suspension of the cage containing the queen to be introduced, and the vacant space filled out by two division-boards and one comb of honey. The latter to replace the first one taken out which generally contains mostly honey. The cage with the new queen should be suspended 2 or 3 inches below the top-bar. A little wire-loop with ends turned at right angles to catch the top-bar will do this very conveniently. The pasteboard cover over the hole to the candy-supply must be replaced by tin or a wooden plug for two days, when this protection may be removed and the bees allowed to liberate the queen by gnawing out the candy. At the same time all combs of brood must be carefully examined, and all started queen-cells destroyed. For the same purpose I examine every hive daily, until the queen is accepted.

Occasionally it happens that I find a queen liberated and balled on the third day. In this case I disperse the troubling bees with a few puffs of smoke and re-cage her for another 24 hours, after which she is generally accepted. My home-made wire cages are more convenient for re-caging than the mailing cages of the trade.

La Salle, N. Y.



Sections in the Four Stages—Photograph by G. C. Greiner.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
Dr. C. C. Miller, Marengo, Ill.
He does NOT answer bee-keeping questions by mail.

Transferring—Increasing—Requeening

1. I wish to transfer from old hives to good ones. When is the best time and what is the best way to do the job?

2. Is this a good time to feed bees, and how is the best way to do it?

3. I have a double-walled hive, and wish to know the best way to stock it with bees. Shall I wait for a new swarm or take frames out of some of the hives I speak of that need repairing?

4. Would it be best to buy a nucleus and a queen or bees by the pound?

5. I have 13 colonies, and would like to have them put off one swarm each for increase. How can I govern them so as not to have more than one?

6. Would it be safe to feed now with a Boardman entrance feeder without startin robbing?

7. I have never introduced new queens, but have the same ones I begun with two or three years ago. Do you think I should introduce new ones, and when?

8. Is it necessary for frames to be wired?

INDIANA.

ANSWERS.—1. On any one day when bees are flying freely it is a simple matter, supposing your hives are all alike, to lift the frames successively out of a hive that needs repairing and put them into another hive that is in good order. If you have not enough hives in good order to accommodate all, go as far as you can, then put in order the hives you have emptied and fill them on a succeeding day.

2. Any time is a good time to feed bees if there is any danger of starving. It is also well, even if there is no immediate danger of starving, to see that they have abundance to last until harvest and a little over. Of course, it will not do to have the frames so filled that the queen has no room to lay, but there is not much danger of that, for when brood-rearing gets well under way it is surprising how rapidly the honey is consumed in preparing food for the babies. The very best way to feed is to give frames of sealed honey. Likely you haven't any, but now is a good time to make a mental resolve that you *will* have some in readiness for next spring. The best way to feed these heavy combs in early spring is to put one in each hive under the bottom-bars. This is easily done if you have bottom-boards with a space 2 inches deep. If you have no such deep bottom-board, then you must open the hive and put in the frame of honey, then use sugar syrup, half sugar and half water, feeding it in a Doolittle, Miller, Boardman or other feeder.

3. If the frames are of the right size, change the contents of one of the old hives into the new one; otherwise wait until you can put a swarm in it.

4. That will be all right if you want to increase that much and want to stand the extra expense.

5. When a colony swarms, hive the swarm and set it in place of the old hive, putting the old hive close beside it, both hives facing the same way. About eight days later move the old hive to a new stand 10 feet or so away. That's all you have to do; the bees will do the rest. When the old hive is moved to a new place, the field bees that go out to forage will go just the same as if they had not been moved, but when they return from the field, instead of returning to the old *hive* they will return to the old *place* and join the swarm. The mother colony being thus bereft of its fielders, and finding no honey coming in, will feel so discouraged that the first virgin emerging will be allowed to destroy all its rivals and there will be no further swarming.

6. There is not much danger if you avoid spilling feed and feed in the evening after bees have stopped flying.

7. The likelihood is that you haven't a single queen that you bought two or three years ago. Bees of their own accord generally supersede their queens every two or three years. So there is no need of introducing new queens unless for the sake of having better stock.

8. Not absolutely necessary, but better, to have the combs strengthened by being supported by wires or foundation splints.

Transferring—Swarming

1. What is the best way to transfer a swarm of bees from an old box-hive which

is in very bad shape to a new hive, and what is the best time of year?

2. Can I get several colonies from one hive during the summer, without letting the bees swarm? ILLINOIS.

ANSWERS.—1. You can transfer in the usual way during fruit bloom, but perhaps the best is to wait until the colony has swarmed. Then hive the swarm in a proper hive, and 21 days later either transfer the bees from the old hive into a new one, or else break up the old hive and add the bees to the swarm.

2. Yes, if the bees are in a frame hive you can divide the colony into several. One way is to take from the colony two frames of brood with adhering bees and the queen, and put them into a new hive on a new stand. Ten days later you can divide into two or more parts what is left in the old hive, making sure to have a good queen-cell in each part.

Uniting Colonies and Introducing Queen at Same Time

1. I have 2 colonies that are very weak, and want to unite them and introduce an Italian queen at the same time. How is the best way to do it?

2. How would it do when the prime swarm comes off, to kill the queen and put the bees in a swarm box for about 12 hours, and then introduce an Italian queen?

3. Which is the better extracting frame, the ⅞-inch top-bar with two grooves or the ½ inch top bar with one groove for extracted and chunk honey?

4. Which would be the better hive for this country, the 8 or 10 frame?

5. What kind of bees would be the best for this part of the country, and what do you think of southern Oklahoma for honey production? OKLAHOMA.

ANSWERS.—1. Destroy the queen in each hive, and introduce the Italian queen into either hive, just the same as if there were to be no uniting; put a sheet of newspaper over the stronger, if there is any difference, and set the hive over it. All of this you will do at one time. The bees will gnaw through the paper and unite peaceably, and in four or five days you can move all brood from the upper hive into the lower, as also the bees.

2. It would probably work, only the swarm would not be quite so contented with a strange queen.

3. One will probably work as well as the other.

4. Probably the 10-frame.

5. Likely Italians will do as well as any. From all I know, bees should do well there.

Using Swarm Box—Catching Stray Swarms—How Late?

1. How can I use a swarm box as mentioned in "First Lessons in Beekeeping?"

2. Do you think it would help to get more bees if I would put up decoy hives to catch swarms, and how should I put them up and where?

3. Is a swarm worth hiving after the last of May, and how late are they worth saving?

4. Is there any special lumber which should not be in hives?

5. Which is the best way to wire foundation in frames; will the wire bother the bees?

6. Does it harm the bees to put them in newly-painted hives, and does it hurt to paint hives after the bees are in and working?

7. Is there any danger of losing swarms if the hives are in too hot a place? Is it necessary to keep bees in the shade all the time?

8. Is there any special width of foundation to use in a brood-chamber? If I use thin brood foundation, how much can I put in each frame? INDIANA.

ANSWERS.—1. A swarm box being lighter than a hive, instead of carrying the hive to where a swarm is, the box may be taken there, and when the swarm is in the box it can be carried to the hive, laid upon its side with the open part of the box toward the entrance of the hive, so the bees can run from the box into the hive. If they are too slow about it they can be dumped on the ground in front of the hive by jarring the box on the ground.

2. If stray swarms are plenty you would be very likely to catch some in decoy hives. Into an empty hive put one or more empty brood-combs (the blacker the better), and set the hive anywhere outdoors where the bees can have free access to it. That's all.

3. In my locality nearly all swarms issue after the last of May. A good swarm is worth saving no matter how late it comes.

4. Basswood is bad, owing to its tendency to twist and warp. White pine is generally used, and in some places redwood and cedar.

5. Wires are generally stretched horizontally, 4 wires to the frame. The bees are not likely to pay much attention to them.

6. The only harm likely to happen would be that bees might stick to the fresh, soft paint. If you paint a hive with bees in it, better do it in the evening after bees stop flying, and use drier in the paint.

7. There is great danger that a newly-hived swarm will desert if its hive is too hot. After it becomes settled and has started brood, the danger disappears, and a colony may do well without any shade. Yet in most places it is better that a hive shall be shaded in the heat of the day. A nice thing is to have a hive under a tree, which shades it in the middle of the day, but allows the sun to shine upon it in the morning and evening.

8. It is well to have the foundation come down to within ½-inch of the bottom-bar. It is not absolutely necessary to use full sheets; if you use narrow starters you can still handle the frames, only in that case you will probably have too much drone-comb.

When to Put on Summer Stands—Rearing Queens

1. How soon will it be safe to take out of their winter chaff lined boxes and put on summer stands bees that are in single-walled hives?

2. I understand that the best queens are reared during the swarming season, and that the best time to requeen is after the honey-flow stops, in the fall. How do you keep those queens until fall, and how can those you do not use in the fall be kept over until next spring?

3 The cuts showing how to nail dovetailed hives, nail only every other dovetail. Do you think that is the best way, or should every one be nailed? IOWA.

ANSWERS.—1. It is much the same as taking bees out of cellar. Usually it is well to take bees out of cellar about as soon as soft, or red, maples are in bloom; although this year it turned so cold that my bees were not taken out of cellar until April 13, which was 18 days after the blooming of soft maple. If, however, the bees are not to have their stands changed, and can have a flight without removing any packing, it is better for the bees to have the warmth of the packing until it is fairly hot weather, say about the last of May in your region.

2. "Swarming season," and "fall" sound farther apart than they may be found in actual practice. Swarming season, for instance, in my locality, and perhaps in yours, does not generally begin until about the first week in June, and may continue until August. Good queens may be reared during this time, and indeed so long as a good flow continues, swarm or no swarm. Suppose a colony swarms July 1, and you utilize its queen-cells. From them you will have laying queens perhaps July 15. If the season closes as early as I have known, it will be just as well to requeen July 15 as later. At any rate you will likely have swarms enough later to accommodate you, for it is well to requeen toward the close of harvest rather than to wait until all gathering has ceased. If, however, you have laying queens before you need them, keep them in nuclei until needed. Possibly you may be able to winter them in nuclei, by putting them in cellar.

3. At top and bottom nail at least two consecutive dovetails; it's not so important about the central ones. I have had pretty good success by driving a nail vertically at top, and one at bottom.

Southern Bred Queens

Will bees winter just as well when in a cold climate, reared from a queen bred from a southern strain? PENNSYLVANIA.

ANSWER.—It is considered that there is no difference.

Rearing Queen-Cells—Requeening

Almost all of my bees are blacks, and I want to rear queens from some pure Italians to requeen all the others. There are no drones flying yet, but there is plenty of drone-brood sealed over. After trying the Alexander plan of increase I did not get any queen-cells started, so I set the queen with some brood on a new stand close by and left most of the brood on the old stand, and after five days I did not find any queen-cells started. The bees have plenty of old honey, and there is nectar available, so they do not care for artificial feed. Bees usually swarm here in April; sometimes beginning in March. May is slack of nectar, and the main flow begins late in June. I am prepared by Doolittle's plan to care for cells and hatch them. CALIFORNIA.

ANSWER.—As I understand it, your trouble is that the bees do not start cells at all, even when only a few bees are taken with the queen from a full colony. That is unusual, very. It is possible that the bees are not gathering nectar enough, although from what you say I should hardly think so. Another suggestion is that there is a difference in colonies, some being more inclined to start queen-cells than others, and that if you should try another colony you might have better success. A third thing that may make a difference is the character of the combs. Bees prefer to have holes or inequalities in the combs that give plenty of room for the cells. That which of all things seems to suit them best is a freshly-built comb that only partly fills the frame. Take from your best colony temporarily most or all of its combs, and let them fill a frame half full of comb, with its young brood and eggs, then give this new comb to a strong queenless colony, with or without other brood, and if the bees don't start cells on that virgin comb the case is hopeless.

Wiring Frames—Drone Rearing

1. Is it necessary to use wire in the frames when full sheets of foundation are used in the brood-chamber?

2. If so, how large a piece of foundation would be safe to use in the frames without wire?

3. Doesn't the wire bother the bees in drawing out the comb?

4. At what time do bees begin to rear drones? MICHIGAN.

ANSWERS.—1. Unless you use wire or foundation splints you will be sure to have bulged combs, unless it be in very shallow frames with heavy foundation, and it is cheaper to use wire than very heavy foundation.

2. From 2 to 4 inches ought to work all right, depending upon the thickness of the foundation. But in the long run it is more expensive to use starters than full sheets, for you are sure to have too much drone-

comb with starters, and it's expensive business to support a lot of useless drones.

3. No, it doesn't seem to; at least they build out the comb the same as if no wire were present, and the cells where the wires are occupied with honey, pollen or brood just the same as if there were no wires.

4. Eggs are likely to be laid in drone-cells as soon as there is a considerable flow, and drones will appear 24 days later.

Lazy Bees—Producing Chunk Honey—Rearing Queens and Drones from Same Colony

1. Last season I had lazy colonies that did not do anything but rear bees. They were running over with bees, but did not swarm nor store any surplus honey. Would it be best to give them another queen?

2 How would it work for chunk honey to put on an extra body of Hoffman brood-frames with brood foundation or would it be better to use section foundation?

3. Would you advise rearing drones and queens from the same mother?

4. Do bees store more honey and quicker in 2 story hives than they would in supers, and do you advise 2-story hives for honey to be sold as chunk honey?

WEST VIRGINIA.

ANSWERS.—1. It is possible that there may have been some excuse for the bees doing nothing, but if other colonies were doing well at the same time the likelihood is that the bees were at fault, in which case it would be well to give a queen of better stock.

2. The thinner foundation would be better for table honey, and yet some have reported that the heavier foundation was thinned down by the bees. It would not be a bad plan to try each, and then you would know better what to do in future.

3. It will be better to rear queens from your very best colony and drones from a few of the next best. Yet if you should try to rear queens and drones both from the same colony it is not certain that much harm would come from it, for the young queens would be likely to meet drones from other colonies, perhaps from a colony a mile or more away.

4. They will probably store as much in one as in the other. Like enough they will start a bit sooner in a super, provided it be shallow. For chunk honey you will probably like something shallower than the brood-combs.

Reports And Experiences

Two Percent Loss

Bees have wintered finely. The loss was 2 percent out of 100 colonies.

Anthon, Iowa, April 16. G. W NANCE.

Stronger Than Ever

I have kept bees since 1863, and I have never had bees as strong as they are this year. JOHN A. THOMAS.

Mt. Pleasant, Iowa, April 30.

Wintered Better than in 38 Years' Experience

Prospects for the season are very promising. Bees have wintered in better shape than ever experienced in all my beekeeping career of 38 years. G. C. GREINER.

La Salle, N. Y., May 4.

Better Outlook in Vermont

My bees have wintered finely this year. I haven't lost a colony out of 50. I wintered them in the cellar, and set them outside April 2. There was plenty of snow here this last winter. We ought to get some clover honey. We haven't had a clover year for 3 years; basswood hasn't yielded for 2 years. Last year my honey was from raspberries, goldenrod and asters. M. C. YOUNG.

Rutland, Vt., April 8.

A Good Outlook in California

While the old saying is always possible, "There's many a slip 'twixt the cup and the lip," nevertheless it has been nearly 20 years since southern California, in almost all sections, has had such bountiful rains up to this time. Perhaps the rainfall has never been so unevenly distributed, varying all the way from 7½ inches to 35 inches over the sage and wild buckwheat ranges. Almost all beekeepers are very sanguine, and consider the prospects very favorable for at least an average crop of honey. This is for the *unirrigated* sections.

L. L. ANDREWS.

Corona, Calif., March 12.

Location is Almost Everything in Beekeeping

We had our bees rented last year down in Wyoming, and by all accounts they gathered the usual amount of honey that they have in the 10 previous years. In regard to Mr. Wilder's article about locations, my experience has taught me that locations are everything in beekeeping. The man who happens to start in the right location is bound to win out. While clover regions are not always reliable. White clover does not furnish honey every year, neither does white sage. If any of the readers of the American Bee Journal are thinking of changing locations, I can, if they write me, tell them where to locate for a sure crop every year without cellaring the bees, and no enemy to annoy them in the least.

Katispell, Mont. J. D. KAUFMAN.

Optimistic Outlook

Our 97 colonies are in the finest shape we ever had bees at this time of year; plenty brood, pollen, stores and bees, and the honey-flow is due in this locality June 20. So we expect to have 97 colonies in extra good shape by that time.

The past winter was very favorable to the bees. We had no long continued cold, so all our colonies came through finely. They were wintered outdoors in chaff hives. We rear all our queens, and never had but one case of foulbrood. It was given treatment promptly, and I have not had a trace of it since, and that was 4 years ago.

GRANT LUZADER.

Pennsboro, W. Va., April 16.

The Market for Honey in France

Trade reports based on statistics, and written without a special knowledge of the article in question, are apt to lead to wrong conclusions. The American trade would experience a disillusion if it based its calculations on the prices given in the report under this heading, on page 80.

The price of 150 francs ($28.85) I do not think has ever been reached. After 2 years of failure, the highest price reached last year was 135 francs per 100 kilos, 12 cents per pound. In average years the price ranges between 90 and 110 francs, 8 and 10 cents per pound

Now, if it came to furnishing an indifferent kind of honey at these prices, even with a duty of $1.75 per 100 pounds, America might make attractive offers to the French trade, but competition is absolutely barred for the simple reason—and this was omitted in your consular report—that these quotations are for a special kind of honey, which *the United States do not furnish*, and required by the trade and the French public, that will only take that particular honey for table use. It is just as in England, where more than double the price paid for your most appreciated honey is paid for the domestic Scotch product, although there is no duty on honey. The honey is known in trade as "surfin extra," and is gathered on *Sainfoin*, a smaller part on crimson clover—both plants not cultivated in the United States to an extent worth mentioning.

This honey is nearly water white, very rich, and of a most exquisite taste. Other honey in France does not fetch anything near the price paid for the "surfin extra." In biscuit factories, bakeries, etc., dark honey from Ille-et-Vilaine, Eure-et-Loire, and Morbihan is greatly used. Its quotation at present is 78 francs per 100 kilos, a little less than 7 cents per pound, which can be considered an average price for this honey.

Owing to its strong flavor and its quality of coloring cakes a beautiful dark brown, this honey can be replaced by no other kind, according to the statement of a large German factory that yearly takes 130,000 to 150,000 pounds of it against 960,000 pounds of western honey which is imported directly from Cuba, Domingo, Chili, etc., for the manufacture of cheaper kinds of cake.

Perhaps the greatest honey districts are the "Landes." It is a part of France of which the Editor gave a description in this magazine. The honey there produced is used a great deal in the manufacture of adulterated honey, and for that reason also exported to Germany. It is paid to the beekeeper 5 cents per pound.

As the duty of honey is 1¾ cents, American dealers would have to furnish honey for 3¼ cents free, in France, if they would compete in selling honey to the factories of "miel de fantaisie!" (adulterated honey.)

I will wind up by quoting from a letter of one of the largest dealers in France:

"Foreign honey competes but little with French honey. There is a duty of 20 francs per 100 kilos, which is fully sufficient to protect local production."

C. KNEPPELHOUT.

Driebergen, France, March 24.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

BEES AND QUEENS from my New Jersey apiary.
J. H. M. Cook,
1Atf 70 Cortland St., New York City.

GOLDEN all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
2Atf Robert Inghram, Sycamore, Pa.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

PURE TUNISIAN QUEENS, tested, $1.00; 2-lb. bees with tested queen, $4.00. Safe arrival guaranteed. Lenoel, Nabeul, Tunis.

UNTESTED Queens, 75c each; $7.50 per doz. Nuclei, $1.25 per frame. Bees, $1.50 per pound. Full colonies, 8-frame, $6.50; 10-frame, $7.50.
Stover Apiaries, Mayhew, Miss.

BRITISH GOLDEN QUEENS, Carniolans, leather-colored Italians, tested, $1.50 each. Diseases unknown. William Beck, Scosthrop Apiary, Bell Busk, via Leeds, Eng.

FOR SALE—Fine Italian Queens. See my large ad. in this issue.
J. F. Archdekin, Rt. 7, St. Joseph, Mo.

1914 QUEENS—Moore's strain of leather-colored Italians In April at 75c. Bees by the pound and Tested queens. Write us for prices on nuclei. Address,
Ogden Bee & Honey Co., Ogden, Uta

Italian Queens—Bees by lb. Descriptive List free. Apiaries under State inspection. Leaflets, "How to Introduce Queens," 15c. "How to Increase," 15c; both, 25c. 2A1t
E. E. Mott, Glenwood, Mich.

Queens—10 percent discount for orders received before May 1, to be filled in May and June. Tested, $1.00; untested, 75c. Dead ones replaced free. 2A9t
S. Click, Rt. 2, Box 16, Mt. Jackson, Va.

We Will be in the field with good Italian Queens in June for $1.00 each; 6 for $5.00. Two-frame nuclei in June without queen, $2.50; with queen, $1.00 extra.
D. J. Blocher, Pearl City, Ill.

Phelps' Golden Italian Bees are hustlers.

Italian Queens, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or $7.25 per dozen. Safe arrival guaranteed.
W. W. Talley, Queen Breeder,
3Atf Rt. 4, Greenville, Ala.

Ready after April 20. Good Italian Queens. Tested, $1.00; untested, 75c. Satisfaction guaranteed. G. W. Moon,
1904 Adams St., Little Rock, Ark.

California Italian Queens and bees by the pound for June and later delivery. Booked full until June 1st. Circular and price-list free. Write,
J. E. Wing, 155 Schiele Ave., San Jose, Calif.

Northern-reared Queens of Moore's strain of leather-colored three-banded Italians. After June 15, untested, $1.00; 6 for $5.00; 12 for $9.00.
Ramer & Gluen, Harmony, Minn.

If You need full colonies or nucleus colonies of bees write us for prices on healthy good working stock. Tested Italian queen, $1.25; untested, $1.00; six, $5 00.
I. J. Stringham, 105 Park Pl., New York, N.Y.
Apiaries: Glen Cove, L. I.

Queens, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

Try Murry's strain of 3 banded Italians. No better queens at any price. Best stock obtainable. No foulbrood or other disease. Latest up-to-date methods in queen-rearing. Tested, 1 for $.100, 6 for $5.00. Untested, 1 for 70 cts., 6 for $4.00.
H. D. Murry, Queen-Breeder, Mathis, Tex.

Three-Banded and Golden Italian queens. Ready March 1. They have been bred for three points, prolificness, gentleness and honey-gathering qualities. Prices, Select Untested, 75c each; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60. Tested, $1.50; Select Tested, $2.00.
Garden City Apiary Co.,
R. R. 3, Box 86, San Jose, Calif.

For Sale.—Three-banded Italian Queens, bred from the best honey-gathering strains, that are also hardy and gentle. Untested queens, 75c; six, $4.25; 12, $8.00. Tested, $1.25; 6, $7.00; 12, $12. For select queens, add 25c each to above prices. Breeding queens, $3.00 to $5.00 each. For queens in larger quantities write for prices. Robt. B. Spicer,
Wharton, N. J.

Pure Golden Queens, the best that twelve years can produce. Untested, $1.50 each. Select tested, $3.00 each. Breeders, $5.00 to $50. Send for booklet on "Bees and Diseases." Geo. M. Steele,
30 South 40th St., Philadelphia, Penna.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

The Bankston Bees and Queens are as good as the best. Golden, Three-band and Carniolan. Tested, $1.00 each; untested, 75c. Queens ready to ship April 15. Bees, per pound, $1.50. Nuclei, per frame, $1.50. Write us for prices on large lots of queens. Try us and be pleased.
Bankston & Lyon, Box 141, Buffalo, Tex.

Golden and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

Dunn's Golden Italian queens, bred strictly for business that produce a strong race of honey gatherers. March 1 to Oct. 15. One, mated, 75c; 6, $4.25; 12, $8.25, 50, $32.50; 100, $60. L. J. Dunn, Queen Breeder,
2A9t Box 337 G, R. R. 6, San Jose, Calif.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

Quirin's Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G. Quirin,
The Queen Breeder, Bellevue, Ohio.

Queens Bred from Doolittle's best stock. Untested, 60c each; $6.60 per doz; $50 per 100. Same stock of one-year old queens removed from our colonies to prevent swarming, 50c each; $5.40 per doz; $40 per 100. Delivery guaranteed. Nuclei 2-frame, $1.50; 3-frame, $2 00. Add price of above queens wanted. We have a rare bargain of apiary of several hundred colonies of bees for sale on easy terms. Particulars on request,
Spencer Apiaries Co., Nordhoff, Calif.

Famous North Carolina Bred Italian Queens for sale (red clover 3-banders). Honey-gatherers good as the best. Strictly reared from Geo. B. Howe's best breeders; mated with Root's, Moore's, Davis' Select Drones; bees that get the honey. Free from disease. Untested, one, 75c; per doz., $7.50. Select untested, one, $1.00; per doz., $9.00. Tested, one, $1.25. Select tested, $1.50. Extra select tested, $2.00. Breeders, $3.00 and $5.00. H. B. Murray, Liberty, N. C.

Guaranteed purely mated 3-band Italian queens, J. E. Hand strain, bred for gentle, prolific, honey-gathering, wintering, and long life. State inspector's certificate. Queens by return mail or your money back. Before July 1, select untested, one, $1.00 6, $5.00; tested, one, $1.25; 6, $7.00; select tested, one, $1.75; 6, $9.00. Breeders, $5.00. After July 1, select untested, one 75c; 6, $4.00; 12, $7.00; tested, one, $1.00; 6, $5 00; 12, $9.00. Select tested, one, $1.25; 6, $7.00; 12, $13.00. Breeders, $4.00; 10 percent discount on 30 days' advance orders. Safe delivery guaranteed in Uuited States and Canada. Reference First National Bank.
J. M. Gingerich, Arthur, Ill.

Three-Banded Italian Queens. Before July 1st, untested, one, $1.00; 6, $5.00; 12, $9.00. Select untested, one, $1.25; 6, $6.25; 12, $11.

After July 1st, untested, one, 75c; 6, $4.00; 12, $7.00. Select untested, one, $1.00; 6, $5.00, 12, $8.50 One-frame nuclei, 75c; 2-frame, $1.50; 3-frame, $2.25. To each nucleus add price of Queen. Our Queens are reared in a locality where there has never been disease, and reared from strong vigorous colonies. The apiary is under most competent supervision. Safe arrival and satisfaction guaranteed.
Horner Queen & Bee Co., Ltd.,
Youngsville, Pa.

HONEY AND BEESWAX

"Null's Famous Melilotus Honey.' Sample for stamp. Null Co., Demopolis, Ala

Wanted—Comb, extracted honey, and beeswax, R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale— No. 1 white comb, $3.00 per case fancy, $3.25; 24 Danz. sec. to case, and 6 case; to carrier. Wiley A. Latshaw, Carlisle, Ind.

$1000 (one thousand). I will pay the above amount in cash for one pound of honey that is equal to my *Red Ripe* (Harnessed Sunbeams) Honey in digestibility, nutrient, value or flavor. Samples and prices free
C. W. Dayton, Owensmouth, Calif.

SUPPLIES.

Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

Better Hives for Less Money—Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

The A. I. Root Company's Canadian House. Dadant's Foundation. Poultry, Supplies, Seeds. Write for catalog.
The Chas. E. Hopper Co.,
185 Wright Ave., Toronto, Ont.

The National Beekeepers' Association now buy supplies for their members. Send us your order, enclosing the same money you have to pay others, and we will buy them for you on the co-operative plan. If not a member we reserve the right to retain $1.50 from the profits on your first order to pay your membership dues and subscription to the Review one year. Sample copy of the Review free. Address,
National Beekeepers' Ass'n., Northstar, Mich

For Sale.—

300 8-fr. supers in flat with fence separators and section holders, fitted for plain sections, 4¼x4¼x1½, with super springs, each	$30	cts.
250 of above set up and painted	35	"
250 10-fr. like above, set up, painted	40	"
300 wood-zinc queen-excluders, 14x20	12½	"
200 " " " 16x20	15	"
20 chaff division-boards, nailed	15	"
1 comb bucket	75	"
10 supers for Imp.Lang.-Simp.hives	20	"
25 Miller feeders, with super for 8-fr. nailed and painted	35	"
50 Porter bee-escapes, with board, painted, for 8-fr. hives	30	"
50 Porter bee-escapes, with board, painted, for 10-fr. hives	35	"
30 full depth 8 fr. hive bodies with full drawn combs, 8 in hive, each	1.50	"
50 10-fr. hive bodies with 10 Hoff'n frames set up and painted, each	50	"

COPY OF CERTIFICATE OF INSPECTION.

Redwood Falls, Minn., May 6, 1914.

This is to certify that I have this day inspected the apiary of Mr. F. A. Gray, and found no evidence of any contagious disease. J. A. Holmberg,
State Inspector of Apiaries.

All of the above supplies will be sold in lots to suit. All of the above supplies except those in flat have been used, but are in fine condition. F. A. Gray, Redwood Falls, Minn.

FOR SALE

For Sale—22 1½-story Danzenbaker hives with brood frames and section holders; practically as good as new, $1.50 (½ of price list). 5 1-story, $1.00. Bees were transferred, combs and frames boiled to melt wax. No disease. Alfred Mottaz, Utica, Ill.

For Sale—240 colonies of bees and everything for running three apiaries for extracted honey. Also 120 acres of land in a good location where raspberry, clover, basswood and fall flowers grow. Write for price.
E. S. Frost, Rt. 8, St. Louis, Mich.

MISCELLANEOUS

Original and unique honey advertising post cards (photos). Write Dr. Bonney, Buck Grove, Iowa, for samples.

I Got 100 pounds of comb honey per colony; my neighbors got none. I'll tell you how for 25c. O. N. Baldwin, Baxter, Kan.

Make paint without oil cheaply. Best known for bee-hives, barns, coops, etc. Formula, 15c. I. Holmberg,
El Dorado Springs, Mo.

SITUATIONS.

Wanted—A reliable man to work with bees. State age, experience and wages in first letter. Rocky Mountain Bee Co.,
Forsyth, Mont.

WANTED TO EXCHANGE—8 and 10 frame Dovetailed hives in flat, Dadant uncappin cans, and other supplies; all new goods Want honey. Stanley Ingalls, Lenox, Iowa.

THE BEEKEEPERS' REVIEW Clubbing List The Review and American Bee Journal one year $1.50. The Review and Gleanings one year, $1.50. All three for one year only $2.00. Dealers, or those wanting to buy honey, kindly ask for a late number of the Review having a list of 100 producers having honey for sale. Address.
The Beekeepers' Review, Northstar, Mich.

POULTRY

FOR SALE—Single Comb Buff Orpington eggs for hatching, pure bloods: $1.00 per 15 or $5.00 per hundred. Satisfaction Guaranteed. W. H. Payne, Hamilton, Ill.

Statement of Ownership, Management, Circulation, Etc.,

of the American Bee Journal, published monthly at Hamilton, Illinois, required by the Act of Aug. 24, 1912.

Editor—C. P. Dadant.

Business Manager—M. G. Dadant.

Known bondholders, mortgagees, and other security holders holding one percent or more of total amount of bonds, mortgages or securities—None.

C. P. Dadant—Editor.

Sworn to and subscribed before me this 23d day of March, 1914.

[SEAL.] H. M. CUERDEN,
Notary Public.

My Commission expires March 25, 1915.

SAVE YOUR QUEENLESS COLONIES

We can furnish vigorous Tested Queens by **return mail** for $1.00 each. Untested Queens ready April 15. $1.00 for single queen; $9.00 per doz. Three-banded Italians only. No disease, and satisfaction guaranteed.

J. W. K. SHAW & CO.,
Loreauville, Louisiana

ITALIAN QUEENS NORTHERN BRED

Superior winterers, second to none. My free list explains it all. Untested, $1.00; select tested, $1.50. Bees by the pound or half pound. Plans, "How to Introduce Queens," 15 cents, "How to Increase," 15 cents; both, 25 cents.

E. E. MOTT, Glenwood, Mich.

ARCHDEKIN'S FINE ITALIAN QUEENS

Three-banded. Bred for persistent profitable production of honey. Prolific, hardy, gentle. The bee for pleasure or profit. One customer says, "Your queen soon had her 10 frames running over with bees that are hustlers. No disease. Satisfaction guaranteed. Orders filled promptly. Ready May 20.

Untested, $1.00 each; 6 for 5.50; doz., $10.
Select tested, $2 each.

J. F. Archdekin, R. R. 7, St. Joseph, Mo.

Miller's Strain Italian Queens

By **return** mail after June 5th to 10th or money refunded. Bred from best **RED CLOVER** strains in U. S. In full colonies, from my **SUPERIOR BREEDERS,** northern bred; for business; long tongued; leather color or three-banded; gentle; winter well; hustlers; not inclined to swarm; roll honey in. Untested, 1, $1.00; 6, $5.00; 12, $9.00. Select untested, one, $1.25; 6, $6 00; 12, $11.00. A specialist of 17 years' experience. Safe arrival and satisfaction guaranteed.

I. F. MILLER, - BROOKVILLE, PA.

HONEY AND BEESWAX

CHICAGO, May 18.—The volume of trade is very narrow and consists in dealers buying just a little to have it on hand when inquired for. No longer is there a show made of it on the counters, etc., as in winter months, all of which is a seasonable condition. The fancy grades are not plentiful, and continue to bring from 14@15c per pound, according to the flavor, style and everything else that goes to make a fancy article, Anything off from this grade sells at from 1@3c per pound less with amber grades bringing from 10@12c per pound. Extracted is meeting with practically no demand, and prices are inclined to be easy, especially is this so aside from fancy clover and linden, which, like the comb, is in better demand and more firmly held. Beeswax continues to sell upon arrival at from 33@35c per pound according to color and cleanliness.
R. A. BURNETT & CO.

CINCINNATI, May 17.—It is an effort to make honey sales, and the stock of all grades are heavy for this time of the year. Prices are easier than they were. We note many dealers slashing prices to unload. We are selling fancy comb honey at $3.65 to $3.75 per case wholesale. Extracted amber honey from 5½@6½c a pound. White extracted from 7½@10c a pound, according to quantity and quality purchased. We want beeswax at 32c a pound delivered here.
THE FRED W. MUTH CO.

INDIANAPOLIS, May 17.—Fancy white comb honey is being offered here at 16@17c per pound; amber comb at 14@15c. White clover extracted 9@10c in 5-gallon cans. Much comb is being held here, but at this writing there is very little demand. Extracted is in fair demand. Producers are being paid 32c cash for beeswax or 34c in trade.
WALTER S. POUDER.

BOSTON, May 18.—Fancy and No. 1 white comb, 15@16c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c.
BLAKE,-LEE COMPANY.

KANSAS CITY, MO., May 15.—Our market is about cleaned up on comb honey—not a case left in the wholesalers' hands, and very little left in the retailers'. Plenty of extracted honey, and the demand is very light.

New comb honey in 24 sections should sell for $3.25 to $3.50 per case for No. 1 quality. We quote extracted, white, at 7½@8c a pound. On beeswax we quote 30c for No. 1, and 25c for No. 2 quality.
C. C. CLEMONS PRODUCE COMPANY.

DENVER, May 16.—We have no more comb honey to offer. Are selling extracted honey in a jobbing way at following prices White extracted, 8c; light amber, 7c. We pay 32c per pound cash and 34c in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

LOS ANGELES, May 20.—I beg to advise you that that quotations on honey at present are as follows: Light amber alfalfa, 5½c; light amber sage, 6c; fancy white sage and white orange, 7@8c. Beeswax is in very light supply, and is quoted at 32c.
HAMILTON & MENDRRSON.

NEW YORK, May 19.—As to comb honey, we have nothing new to report. There are quite some off grades of amber still on the market unsold, as there is no demand to speak of for those grades, and it is almost impossible to find buyers.

In regard to extracted, the demand is only fair while arrivals are large, especially from West Indies, and the new crop is beginning to arrive from the southern States. We quote nominally from 58@75c per gallon, according to quality. Beeswax firm at 34@35c
HILDRETH & SEGELKEN.

EASTERN BEEKEEPERS

This is the season when you will need bees or supplies. Our catalog, which is free, will show you how to save money. We have a large stock and can ship promptly.

Italian queens, $1.10.

I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

"NUTMEG" ITALIAN QUEENS

By return mail.

AFTER June 1st untested $1.00

April & May tc t **$**

A.W. YATES
3 CHAPMAN ST
HARTFORD, CONN.

Write for prices by the hundred

Untested Italian Queen-Bees

OUR STANDARD BRED
6 Queens for $6.00;
3 for $3.50; 1 for $1.25
American Bee Journal, Hamilton, Illinois

WANTED Honey!

Extracted and Comb

Will buy or handle on Commission

Beeswax

Will Pay Highest Prices.

Yours very truly,

HILDRETH & SEGELKEN
265-267 Greenwich St., New York, N. Y.

Three-Band Italian Queens For 1914

I will again have for sale, after April 1st, young queens reared from my best Leather-Colored Breeders. You will make sure of improving your stock and securing a crop of honey if you introduce some of these queens. The Leather-Colored Italians are recommended and used by the largest and most progressive bee-men of today.

Untested. $1.00 each; $9.00 per doz., $75 per hundred. Select Tested, $1.50 each.

C. S. ENGLE, Beeville, Bee Co., Texas

3-BAND LONG-TONGUED RED-CLOVER ITALIAN QUEENS

For Sale.—My long-tongued Goldens are proving themselves to be the bee to clean Foul Brood. This is why I have such a large trade in Canada. Mr. E. L. Cox, of Jesup, Iowa, introduced 50 of my 3-band queens in Foul-Broody colonies in 1912; and he said the disease was cleaned up where each of those queens was put. They gathered such a large crop of honey in 1912 that he bought 50 more in 1913.

One Untested, 75c; 6, $4.00; 12, $7.50; 25, $13.50; 50, $25.00

Double the above for tested queens. Bees by the pound: One lb., $2.00; 2 lbs., $4.00. One-frame nucleus, $2.00; 2 frame, $3.00; 3-frame, $4.00. To all the above packages add the price of queen. I will begin to send out queens in April.

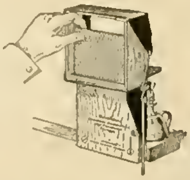
Positively no checks will be accepted. Send money by P. O. Money Orders. All queens arriving dead will be replaced if cage is returned by return mail.

J. B. ALEXANDER, CATO, ARK.

QUEENS Pure leather-colored Italians bred in isolated location, mated to drones of a heavy storing strain; cannot be beat for comb honey; cap white; enter supers readily, with little inclination to swarm.

Queens are reared under best possible conditions Will begin mailing about June 15th. Get your orders in early, as the greatest rush is always at the opening of the season. Orders promptly filled. Safe delivery and satisfaction guaranteed. Prices: One 85c; 6 for $1 50; per doz., $8 00. No foulbrood. Send for circular.

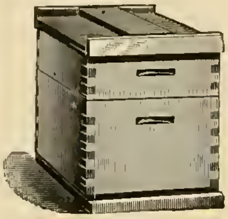
D. G. LITTLE, HARTLEY, IOWA



Keep More Bees—Better!

A big step toward this goal in the production of Comb Honey, is the use of **the new Rauchfuss Combined Section Press and Foundation Fastener.** Does more and better work than anything on the market. Price, $3.00, delivered anywhere in the United States. Satisfaction guaranteed, or your money back. Send for illustrated circular today, to

The Colorado Honey-Producers' Association 1440 Market St., Denver, Colo.



EARLY ORDER DISCOUNTS WILL

Pay You to Buy Bee Supplies Now

29 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.

LEAHY MFG. CO., 90 Sixth St., Higginsville, Missouri

Free BEE BOOK

For Beginners or Old-timers

Lots of good tips on raising those wonderful little money makers in this book—describes our complete line of bee supplies.

Bees Help Pay the Grocery Bill

Little expense, fascinating pastime. Act on good impulse, start right now.

Blanke Mfg. & Supply Co.,
Dept. 1, St. Louis, Missouri

Q-U-E-E-N-S

The Old Reliable 3-Band Stock

My queens are reared from imported stock which makes a beautiful bee. They are fine honey-gatherers, and very gentle. Try my queens. Send me your order, and if not satisfied will return your money. Safe arrival guaranteed. Untested Italian, 1, 75c; 6 $4.25; 12, $8.00.

N. FOREHAND, R. F. D. 2, Brewton, Ala.

Buy Carniolans in Carniola

Pure Carniolan Alpine Bees Write in English for Booklet and pricelist. Awarded 80 Hooors

Johann Strgar, Wittnach
P. O. Wocheiner-Feistritz
Upper - Carniola (Krain), Austria

QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate. Purest of the pure

GREY CAUCASIANS

Bred strictly in the light of **Mendel's Laws of Heredity**; no guess, but positive results. The pioneer **scientific** queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special **isolated mating station** on bald open prairie, not a tree within miles—no chance for gypsy drones.

CHAS. W. QUINN
Box 389 - Beaumont, Texas

ITALIAN BEES

Choice Home-bred Queens Reared In strong colonies.

PRICES FOR MAY

Untested Queen	1.25
One Tested Queen	$1.85
" Select Tested	2.40
" Breeder	3.60
" Comb Nucleus—no Queen	$1.50

Safe arrival guaranteed.

For description of each grade of queens send for FREE catalog.

J. L. STRONG,
Clarinda, - - Iowa

Try My Bright ITALIAN QUEENS

This is what one customer writes:—

Josephine, Tex., June 16, 1913.

Mr. M. Bates, Greenville, Ala.

Dear Sir:—I am sending you $9.00 for which please send me 12 Untested Golden Italian Queens. The queens you sent me are fine, and old bee rearers say they are the finest they ever saw. They have surely made a reputation here for you. Several men say they will order queens soon.

A. M. Morrison.

I have other letters that say the same. Selected Untested, each $1.00; Tested, each $1.50; 2-frame nuclei, each $2.50. I guarantee safe arrival and perfect satisfaction.

M. BATES, Route 4, Greenville, Ala.

LARGEST, BEST

and most complete line of Bee and Poultry Supplies ever seen in Illinois at the lowest living prices. Satisfaction guaranteed or money refunded. Established in 1899 Send for our new catalog. Let us hear from you.

H. S. DUBY & SON, St. Anne, Ill.

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years. In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority.

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL—Breeding.—Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-Page Catalog

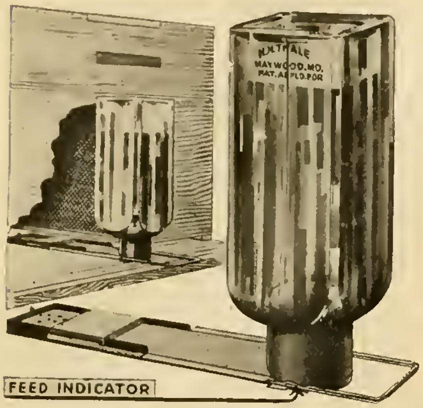
Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

C. H. W. WEBER & CO.

CINCINNATI, 2146 Central Avenue, OHIO



Thale's Regulative Vacuum Bee-Feeder

Pleases everywhere. Not a dissatisfied customer. Let me double your honey crop by stimulative feeding. Most practical method known. Send 55 cts. in stamps to-day for a sample feeder.

ST. ANNE, ILL., April 14, 1914.
H. H. Thale, Maywood, Mo.—
Dear Sir:—Please send me five more feeders with bottles. I am well pleased with the ten I got some time ago. I don't think that any one will be sorry of their investment, as they are the best feeders I have ever used, and have tried all of them.
Yours truly, C. W. DYON.

SATUS, WASH., May 14, 1914.
H H. Thale, Maywood, Mo.—
Dear Sir:—Your feeders work perfectly. They are better than any feeder I have ever used. I am using them side by side with other feeders, and like yours the best.
Yours truly,
J. A. MCCOWAN.

TERMS, CASH WITH ORDER

Sample feeder with two bottles complete, postpaid	$ .55
10 feeders with one bottle for each feeder	3.00
25 " " " " " "	7.50
50 feeders with one bottle for each feeder	15.00
Extra bottles with cork valve each	.10

H. H. THALE, Inventor and Manufacturer **Box A 25, Maywood, Missouri**

Eastern buyers send orders to Earl M. Nichols, Lyonsville, Mass., and B. H. Masters, Edison, Ohio, and Harry W. Martin, New Holland, Pa. Northern buyers send orders to Minnesota Bee-Supply Co., Minneapolis, Minn.

BEES BY RETURN MAIL

Three-band Italians only. Every one knows their good traits for gentleness and honey gathering. They are unsurpassed. Every queen sent out by us guaranteed. **Tested, $1.00 each; Untested, 75c. $8.00 per dozen.**

J. W. K. SHAW & CO., Loreauville, La.
(IBERIA, PA.)

CYPRIAN QUEENS

We have an apiary of pure Cyprians which we have arranged for queen-rearing. Prices, **Untested Queens, $1.00; Select Tested, $2.00**

W. B. DAVIS CO., Aurora, Illinois

Bee-Supplies

LET US FIGURE WITH YOU

We know we can satisfy you on quality. Write for catalog.

C.C.CLEMONS BEE-SUPPLY CO.
Dept. S., Kansas City, Mo.

SYRACUSE CHICAGO NEW YORK BALTIMORE CANONSBURG

CONTINENTAL CAN COMPANY

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HONEY CANS

All Styles—All Sizes

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Sales Offices:
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MARSHFIELD GOODS

BEE-KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

PAGE - KENKEL MFG. CO.

Manufacturers
OF THE
"NONE BETTER"
BEE-KEEPERS' SUPPLIES

Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping-Cases, Brood-Frames, Separators, etc.
We invite your correspondence.

Guarantee — All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

Page-Kenkel Manufacturing Co.,
New London, Wis.

Beekeepers' Supplies and Fruit Packages

We manufacture the famous Sheboygan Hive, which always gives absolute satisfaction. Our perfect sections, made from selected white basswood, are recognized as the best on the market.
Catalog now ready for distribution. Write for copy.

SHEBOYGAN FRUIT BOX COMPANY, Sheboygan, Wisconsin

FOR THE BEST **Early QUEENS**

Send me your address for Italians and Carniolans. I BEGIN mailing Queens early in March. Untested, 75 cts. each. Tested, $1.25 each. Circular free.

Grant Anderson, San Benito, Texas

PHARR WANTS YOUR ORDERS FOR QUEENS

Goldens and 3-Banded Italians

"For twelve years we have asked for your orders and we have gotten all we could fill and sometimes more. But we have ever tried to serve you right, and will guarantee similar treatment in the future. Prices of Untested, $1.00; Tested, $1.50; Breeders, 3.00 to $5.00. Write for prices in large quantities.

2-frame Nuclei, queenless, $2.25 }
3 " " " 3.25 } All F. O. B. Berclair.
10 " colonies with queen 8.00 }

Orders booked now—delivery last of May or June

John W. Pharr, Berclair, Texas

CARNIOLAN QUEENS

Carniolans are excellent winterers, build up rapidly in the spring, are very gentle, very prolific, cap their combs very white, enter supers readily, and keep their colonies strong at all times. Write for our **free** paper, "Superiority of the Carniolan Bee," explaining more fully, giving briefly best systems of management. Untested queens, $1.00 each; doz., $9.00. One-lb package bees without queen, $1.50; with queen, $2.50, in June.

ALBERT G. HANN, Clinton, New Jersey
Carniolan Queen-Breeder.

Dittmer's Foundation

Is the **Comb Foundation** made to **suit the Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

Ask for more information; also prices and **FULL DISCOUNT** on all Bee-Supplies.

Gus Dittmer Company
Augusta, Wisconsin

MUTH-CINCINNATI

"By getting Bee Supplies in carlots and selling them on a close margin, I can name you Factory Prices right here in Cincinnati. I personally supervise all correspondence and the filling of all orders."

—FRED W. MUTH.

Muth's Ideal Bee Veil (illustrated herewith) of light weight indestructible wire and strong cambric; postpaid, 75c; with other goods, 70c.

Send for Our New Catalog

Just off the press; complete information and prices about Bee Supplies.

P. S. Ship us your Old Combs and Cappings, and let us render them for you. Our process extracts every particle of wax from the slumgum. This means money for you. Write for particulars.

THE FRED W. MUTH CO.,

"The Busy Bee Men"

204 Walnut Street, Cincinnati, Ohio

DADANT'S FOUNDATION

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WE MAKE IT GOOD

THE BEES MAKE IT FAMOUS

The Reputation of

DADANT'S FOUNDATION

Has been built on its merit

It is a Favorite with Beekeepers

BECAUSE

It is so well liked by the BEES

Whether it's a pound or whether it's a ton, every sheet is PERFECT.

Satisfaction Guaranteed in Every Way

DADANT & SONS.

HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

JULY 1914

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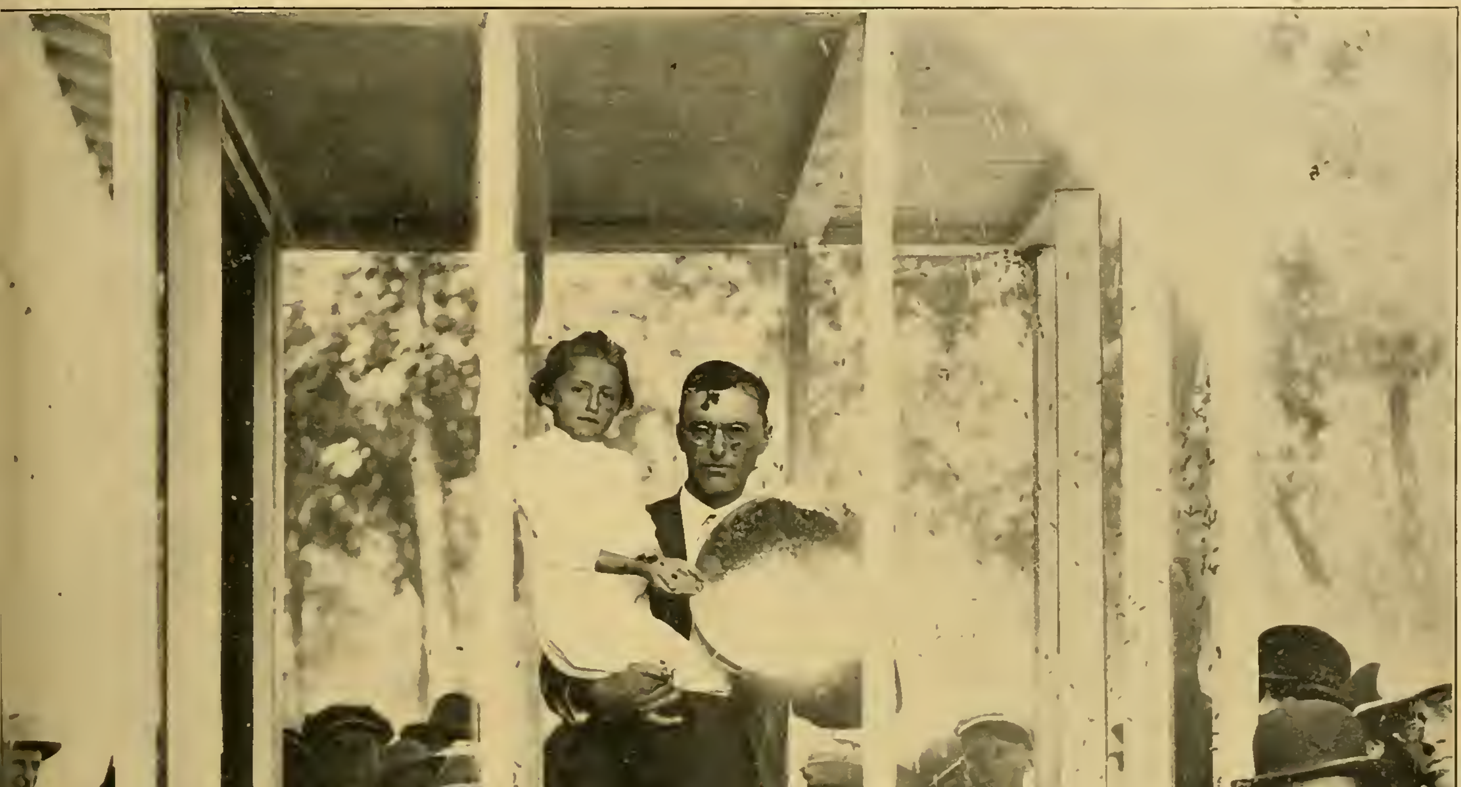


State Inspector Frank C. Pellett and 6-year-old Josephine Dirr demonstrating bees at Sioux City, Iowa.

AMERICAN BEE JOURNAL

ESTABLISHED IN 1861

OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY

American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec14" on your label shows that it is paid to the end of December, 1914.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 5 lines accepted.

DISCOUNTS:

3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 23d of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n

ANTHONY BIAGGI,
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

SUPERIOR

GOLDEN QUEENS

Untested, $1.00; 6, $5.00; 12, $9. Select Untested, $1.25; 6, $6, 12, $10. Prices on application for tested and untested queens by the hundred. Address,

T. S. HALL, Talking Rock, Ga.

"If goods are wanted quick, send to Pouder."

BEE-SUPPLIES

EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections. No shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POUDER, 873 Massachusetts Ave., Indianapolis, Ind.

Queens That "Are Better" Italians and Banats

Untested Queens, 75c each; $8.00 per dozen; two or more dozen in one order, $7.50 per dozen
Tested Queens, $1.25 each; $12.00 per dozen.
Breeder Queens, $3.00 each. Foreign trade add 5 cents each extra.

½-lb. pound packages of bees after May 1, $2.00. Select queen wanted, add to this. The express charges on these will be very small in comparison with charges on frame nuclei.

One-frame Nuclei, with untested queen, $2.00 each; 2-frame, $3.00; 3 frame, $4.00. Full colony of bees in 10-frame hive, $7.00. Add 50 cents if Tested Queen is wanted; $2.00 if Breeder Queen is wanted. For ten or more colonies or nuclei, deduct 25 cents each.

I have successfully shipped bees and queens from this place every month of the year. I started two colonies Jan. 25 on their voyage to Nutsusarida, Kobe, Japan. Each contained a Breeder Italian Queen.

Dear Sir:—The two colonies of bees shipped by you arrived safely, and are perfectly satisfactory. M. SARIDA, Kobe, Japan.

My Bee and Queen exhibits at the State Fair of Texas were awarded six premiums in 1911. Italians also were awarded First Prize at the Cotton Palace in Waco, Tex.

"YOUR MONEY'S WORTH" is my motto. TERMS are *cash* with order. I refer you to Sabinal National Bank or any business firm in Sabinal.

I have ten yards, and with several hundred nuclei I can serve many customers. I solicit your trade.

J. A. Simmons, Uvalde Co. Apiaries, Sabinal, Texas

FLAX BOARD

Flax Board is now used by thousands of beekeepers East and West. We have in our office hundreds of unsolicited letters from some of the largest and most progressive beekeepers in the United States, saying that it is just the thing that they have been looking for for many years, and that they are putting in on every hive in their apiary.

The cost of Flax Board is small. It undoubtedly will pay for itself many times every season. You, of course, know that you must protect your bees against the cold in spring if you want to rear brood for the early honey crop. You also know that most of the heat escapes at the top of your hive while the cold comes in at the bottom. With the use of Flax Board, however, you can entirely overcome this.

We will gladly send you a small sample free if you will write for it

One-half inch thick Flax Board to fit top of hive:

Size.	Price.	Weight.
8-frame	$ .10 each	1¼ lbs.
10-frame	.11 "	1½ "

Order a lot. Try them on some of your hives and compare the difference.

MINNESOTA BEE SUPPLY CO. 100 Nicollet Island
Minneapolis, Minn.

Manufacturers of Dovetailed Hives, Sections, and Shipping Cases.

American Bee Journal

CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.

J. C. Frohliger, Berkeley, Calif.

Greater San Francisco

Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery

Read what J. I. PARENT, of Charlton, N. Y., says "We cut with one of your Combined Machines, last winter 50 chaff hives with 7-in cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free

Address, W. F. & JOHN BARNES,
[illegible] Ruby St., Rockford, Ill.

Please mention Am. Bee Journal when writing.

Try My Famous Queens

From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

Bred in Separate Yards

Untested, one, 75c; 6, $4.25; 12, $7.50; 25, 14.25; 100, $50. Tested, one, $1.50; six, $8.00; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two-frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

P-O-R-T-E-R

(Trade mark.)

BEE-ESCAPE

SAVES {HONEY / TIME / MONEY} AT ALL DEALERS

Each, 15c; Doz., $1.65, postpaid

If your Dealer does not keep them, order from Factory, with complete instructions.

R. & E. C. PORTER, MFRS.,
Lewistown, Illinois

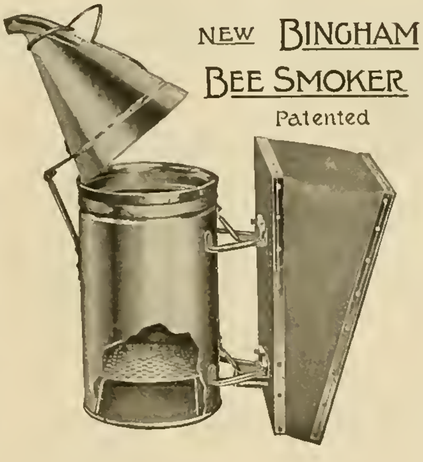
BEEKEEPERS' SUPPLIES

Such as Winter-cases, Sections, brood-frames of every description, Section holders, Comb Foundation, Supers. Hive-bodies, Smokers, etc.

Get my prices before placing your orders.

R. H. SCHMIDT
Rt. 3, Box 209, Sheboygan, Wis.

The Bingham Bee-Smoker



nearly forty years on the market, and the standard in this and many foreign countries. The all-important tool of the most important honey-producers of the world. Such men as Mr. France and the Dadants use the Bingham. By co operation Mr. Townsend uses six Smoke Engines' For sale at your dealers or direct. Postage extra.

Smoke Engine, 4-inch stove; wt. each 1¾ lb.	$1.25
Doctor, 3½-inch stove; wt. each 1⅝ lb.	.85
Two larger sizes in copper, extra	.50
Conqueror, 3-in. stove; wt. each, 1½ lb.	.75
Little Wonder, 2½-inch; wt. each 1 lb.	.50

Two largest sizes with hinged cover.

Woodman Style Veils

Our veils contain 1½ yards of the best material for the purpose—imported French tulle veiling. They are made with a rubber cord in the top to fit around the hat, and the lower edge has the cord arrangement, the two ends going around behind the body, and back in front to tie. This arrangement holds the veil down on the shoulders snugly, away from the neck, and permits the wearer to handle bees in his shirt sleeves with no chance of bees crawling up and under veil. With a hat of fair size brim to carry veil away from the face, you are as secure from stings, movements as free and unrestricted, and as cool and comfortable as you would be at a summer resort.

All cotton, each, postpaid	$ .50
Cotton with silk face, each, postpaid	.60
Bee-hat, flexible rim, fits any head, postpaid	.35
Extra silk face piece, postpaid	.10
Long-sleeve bee-gloves, postpaid	.35

Such men as R. F. Holtermann, J. E. Crane & Son, N. E. France, and many others all over U. S. A., order a supply of these veils each season, year after year.

A. G. Woodman Company, Grand Rapids, Mich.

We Make a Specialty of Manufacturing SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

QUEENS ⁒ QUEENS

Bees by the pound and full colonies

From a superior strain of three **banded Italians.** Hardy, gentle, and they are hustlers. Guaranteed to please you.

Send for my 1914 descriptive catalog

I have a large stock of modern **Bee Supplies** always on hand. **Root's Goods** at factory schedule of prices packed and delivered to my station. All orders will receive prompt and careful attention.

EARL M. NICHOLS,
Lyonsville, Massachusetts

Our HAND-MOORE STRAIN

3-BAND ITALIANS

Are the best honey gatherers. They spoil our white-clover honey by mixing it with red clover. Record tongue reach 23-100 of an inch. Breed strictly for business. Untested, 75c; 12 for $8.00; 50 for $25.00.

LATSHAW HONEY COMPANY
CARLISLE, INDIANA

HOW RED RIPE HONEY SUITS

"C. W. DAYTON:—Please kindly send me some more of your wonderful honey. I enclose $1.24 to cover charges. This honey of yours is really grand, the finest I ever ate in my life.
"GUS DARIES, Avalon, Calif."

QUEENS of MOORE'S STRAIN of ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

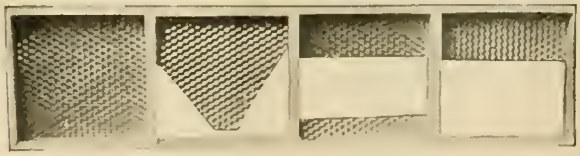
They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.

Untested queens, $1.00; six, $5.00; 12, $9.00. Select untested, $1.25; six, $6.00; 12, $11.00. Safe arrival and satisfaction guaranteed.

Circular free.
J. P. MOORE,
Queen-breeder
Route 1, Morgan, Ky.

"Falcon" Hives, Supplies and Foundation

Everything for the BEEKEEPER



"Falcon" Foundation made in the "Falcon" plant at Falconer, N. Y.

SUPPLIES FOR 1914—Take inventory of supplies now and figure what you will need for a slim season. Get them ready at odd times in the winter; and if there is a good season you will have ample time to re-order in April and get them for use. We like to make 'Inventory Sales" of "**Falcon**" supplies, for we know that we are dealing with an up-to-date beekeeper.

INVESTMENT—What is the investment of an extra $25.00 in supplies to the loss of 500 pounds of honey? Resolve to change for 1914 and buy "**Falcon**" supplies now.

EARLY-ORDER DISCOUNT—For "**Falcon**" hives and supplies bought now we give an early-order cash discount equal to 12 percent per year. You see it pays for a strictly money basis. Write for early-order discounts, and send list of wants for quotation.

"FALCON" QUALITY—In making our beehives, all of our waste lumber is made into cheap toy building-blocks, so that we are able to put better material in our hives and goods. Get a trial lot this fall so that you can see for yourself, and still have time to order 1914 supplies.

FREE SAMPLES of our famous "**Falcon**" foundation, made in our factory at Falconer, N. Y., cheerfully sent postpaid with copy of catalog, and name of nearest dealer if desired.

FACTORY W. T. FALCONER MFG. CO., - Falconer, N. Y., U. S. A

Where the good bee-hives come from

Root's Goods in Michigan

Our Specialty — The "Root Quality" Bee Supplies to Michigan Beekeepers
Prompt Service in Shipping. We sell at factory prices. Beeswax Wanted
Send for 1914 Catalog showing our Parcel Post Service.

M. H. Hunt & Son, Dept. A, Lansing, Mich.

When You Need Queens

We will be pleased to fill your order. Our business of rearing queens was established in 1886. We know what it means to have a good strain of bees and queens that stand second to none. Three-band Italians only—bred for business and free from disease. Tested, $1.00 each. Untested, 75c; $7.00 a doz

J. W. K. SHAW & CO., Loreauville, La.

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The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years. In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority.

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL—Breeding.—Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

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Extracted and Comb

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Yours very truly,
HILDRETH & SEGELKEN
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I will again have for sale, after April 1st, young queens reared from my best Leather-Colored Breeders. You will make sure of improving your stock and securing a crop of honey if you introduce some of these queens. The Leather-Colored Italians are recommended and used by the largest and most progressive bee-men of today.

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CELEBRATED PEDIGREED STRAIN!

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Queens of Quality

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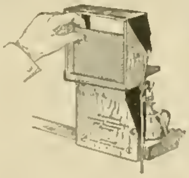

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This is what one customer writes:—

JOSEPHINE, TEX., June 16, 1913.
MR. M. BATES, Greenville, Ala.

Dear Sir:—I am sending you $9.00 for which please send me 12 Untested Golden Italian Queens. The queens you sent me are fine, and old bee rearers say they are the finest they ever saw. They have surely made a reputation here for you. Several men say they will order queens soon.

A. M. MORRISON.

I have other letters that say the same. Selected Untested, each 60c; Tested, each $1.25; 2-frame nuclei, each $2.50. I guarantee safe arrival and perfect satisfaction.

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The sections that are scientifically right—made out of nice bright Wisconsin basswood
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AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JULY, 1914

Vol. LIV.—No. 7

EDITORIAL COMMENTS

Golden Wedding

On May 19, Mr. and Mrs. Thomas W. Cowan, of England, celebrated their golden wedding. Mr. Cowan is the senior editor of that well-conducted magazine, the British Bee Journal. Our congratulations are most heartily extended.

Porto Rican Beekeeping

This is the title of Bulletin No. 15, which has been issued by the Department of Agriculture, price 5 cents. Do not send stamps as they are not accepted by the Department.

This bulletin gives an account of the success of the late efforts to introduce practical bee culture in Porto Rico. Dr. Phillips spent several weeks in the Island last year, and his report, accompanied by statistics and several half-tones, makes very interesting reading.

Does the Queen Know the Sex of the Egg She Lays?

In "L'Apiculture Nouvelle" for May, Mr. Ledoux gives the picture of a comb in which there are both worker and drone cells, but in which, however, the queen laid drone-eggs in worker-cells only. Mr. Ledoux holds that this is an argument in favor of the opinion that the queen does not know the sex of the eggs she lays, otherwise this one would have laid those drone-eggs in drone-cells. The argument is plausible. A drone-laying queen does not seem to have any preference of cells. But it would seem probable that if she knew the sex of the eggs which she lays, she would place them in the proper-sized cells, when they are in easy reach.

Color Sense of the Honey-Bee

We are in receipt, from our able contributor, Mr. John H. Lovell, of five bulletins, reprints of articles written by himself in "The American Naturalist," "The Journal of Animal Behavior," and the "Popular Science Monthly." These extracts all touch the question of the color of flowers and the color sense of the honey-bee.

It is out of the question to quote these articles at length. The author's conclusions are similar to those reached by our leading bee writers years ago, that "bees easily distinguish colors, whether they are artificial or natural colors. Bees that have been accustomed to visit a certain color return to it habitually; they exhibit 'color fidelity.'"

Mr. Lovell tells us that color, although it attracts bees, is not alone sufficient to draw them, as many conspicuous flowers are never visited by bees. But he shows that among the numerous green inconspicuous flowers only a few are honey producers, and attract bees less quickly than nectariferous flowers which are conspicuous and agreeably scented.

He shows that bees are, as a rule, faithful to a single species of flower. They exhibit "flower fidelity" as well as color fidelity. However, this is correct only where there are great numbers of flowers of the same kind, as many of our beekeepers could testify. But it is true that even entire colonies show this fidelity to one kind of blossoms, and Mr. Lovell quotes the well-known California apiarist, M. H. Mendleson, who reported that in 1884, one colony out of 200 gathered honey exclusively from mustard bloom, while the 199 others gathered from the sages. We have ourselves seen, in seasons of honey-dew production, some colonies harvest their entire supply from that source of dark honey, while some others harvested freely from white-clover bloom.

He calls our attention to the well-known fact that plants whose blossoms furnish nectar only at certain hours of the day, like buckwheat, are visited by the bees only during those hours, in spite of those flowers continuing their color display and their sweet odors during the rest of the day. He draws from this the conclusion that "bees are guided by the memory of past experience in gathering nectar," and soon abandon a search for honey in blossoms which either have discontinued their honey-flow or whose corolla is too deep for them to reach the liquid, as in red clover.

The fact that bees remember the hours at which they can find food was proven to me, in 1885, by Mr. Langstroth. During a visit which I paid to him, we had seated ourselves near his apiary, discussing bee culture. Towards 4 o'clock in the afternoon I called his attention to a little excitement in the apiary. This apiary consisted of only 5 or 6 colonies, and a number of bees were flying about, at the rear of one of them. "It is the hour of their feed," said Mr. Langstroth, and going to the kitchen, he returned promptly with a pan full of syrup for which those bees were evidently looking. They at once alighted upon it and began filling themselves.

The hours at which buckwheat furnishes nectar differ a little in different localities, and the bees accordingly vary their hours to suit the nectar-gathering possibilities.

When the corolla of red clover is shorter than common, owing to drouth, the bees are not long in finding it out and they work upon it, even though several years may have elapsed since a single honey-bee had such an opportunity.

The pamphlets above mentioned may probably be had at low cost by addressing the author, Mr. John H. Lovell, Waldoboro, Maine. They are well worth perusal, by the lovers of Nature study.

C. P. D.

Parcel-Post Package

This time it's Allen Latham. From him comes a package of candied honey in brick-form, about 2x3x4 inches, weighing in the neighborhood of a pound. It is wrapped in a single piece of paraffin paper long enough to go two or three times around. This is contained in a neat, light, wooden box. The whole affair is of the simplest kind, no instruction being needed to tell the customer how to open it. The preparation, however, may not be so simple as the package looks.

The size is all right to put upon a plate, and the consistency of the honey could not be improved except for those who prefer honey in the liquid form. Indeed, it is of such peculiar consistency that if one blindfolded were to eat it upon bread, one might not really tell whether it were candied or liquid. While entirely granulated, it is a bit creamy, making it nearly, if not quite, as easy to spread as butter. One queries whether it would be possible to secure always just the degree of consistency. It would be a desideratum.

In one respect something is left to be desired. That very consistency which makes the honey so nice for a spread is such that when the paper is peeled off it does not come off clean and dry, but some of the honey clings to the paper, leaving the cake a bit messy. Likely there is no help for this. Generally, however, it is easier to have the dry cake, and then it will not be so nice for a spread.

Although flavor has little or nothing to do with mailing honey, the unaccustomed Illinois palate is struck with the peculiar flavor (sumac?), which, as there is no accounting for tastes, may or may not receive general approval, with a leaning toward the belief that it may.

D. M. Bryant, of Ethelfelts, Va., With an Early Swarm.

Heat Required to Destroy Disease Germs

Bulletin No. 92, of the Department of Agriculture, entitled, "Destruction of Germs of Infectious Bee Diseases by Heating," is now out, and treats of the matter mentioned in our May number, page 151. It is by Dr. G. F. White, and is very interesting. It is one of the most useful reports on the subject of diseases, and shows the efficiency of the author. It may be had in the usual way by applying to the department of Agriculture at Washington.

Statistics and Crop Prospects

The following letter from Dr. Phillips, In Charge, of Apiculture at the Bureau of Entomology of Washington, D. C., is self-explanatory:

> On Saturday I asked the Bureau of Statistics to send you a marked copy of Farmers' Bulletin No. 598, "The Agricultural Outlook," in which you will find the first report on honey. This is in the nature of a forecast as to the probable 1914 crop, based on number and condition of colonies and condition of the chief honey-plants. Naturally since this is the first effort of this kind, the beekeepers reporting were mostly without experience in such work, and it was sometimes not easy to know how to accept their figures. In some cases the questions were seemingly not fully understood. The report must be taken with these facts in mind, and it is hoped that in the future the reports will increase in completeness and accuracy. There is a tendency on the part of most persons reporting to be conservative in their figures. For example, a beekeeper might say that the bees were never in better shape, and then grade them 105 percent compared with normal, when they may be 50 percent or more above normal. These features will probably diminish with future reports.
>
> The necessity now is for more reporters who are experienced beekeepers and close observers. The present list contains some 3000 names, but twice that number for the next report would be better. After all the accuracy and value of these reports rest with the individual beekeepers who help.

You will understand, of course, that this work does not come from the Bureau of Entomology, but we are helping in every way possible to make this a success. E. F. PHILLIPS,
In Charge, Bee Culture Investigations.

We have received the report in question. It is the first step in a direction which may bring steady and needed information, regarding honey crops. We hope our readers will heed the request made.

The report is a part of Farmers' Bulletin No. 598. The bee statistics are on page 17. The number of colonies in the United States is reported at about 2 percent above normal, and their condition as about 98 percent of normal. The prospect is best in the western and southwestern States. The total average prospect is good.

Interstate Regulations on Honey Branding

The following letter, from the well-known secretary of the Colorado Honey-Producers' Association, is of importance to all honey producers:

We have for some time past corresponded with the authorities at Washington regarding the marketing of honey, comb as well as extracted, for Interstate Commerce. We have just received a telegram from C. L. Alsberg, in charge of this department. He states that it is necessary to mark each individual section of honey, as the same is considered a unit, with the net weight of the eatable portion. We understand this to mean that the section coming up to our grading rules as No. 1, weighing 13½ ounces, will have to be marked "minimum weight 12½ ounces," as the wood of the section practically weighs an ounce. This will cause a great deal of extra labor to all comb-honey producers, and some expenditure for the proper rubber stamps, pads, etc.

It is necessary that the attention of all beekeepers should be called to this matter at the earliest possible moment, so they can prepare themselves for it and see that none of their honey goes out unless properly marked. Where a number of beekeepers are marketing their honey through a common channel, as through an association, it of course becomes necessary that each individual section should have an identification on it either in the shape of initials or a number. We will take steps so that our members will mark all their honey in this way.

If you will bring the contents of this telegram before your readers in the next issue of the Bee Journal, you will greatly oblige.

COLO. HONEY-PRODUCERS' ASS'N.
F. Rauchfuss, *Mgr.*

TELEGRAM.

WASHINGTON, D. C., May 25, 1914.
Frank Rauchfuss,
1440 Market St., Denver, Colo.

Regarding the branding of honey in frames or cartons, weight of actual contents should be marked upon frames of individual units or upon the outside of the cartons when used. Regulations paragraph H, minimum weight "blank" ounces is suggested as convenient form. Letter follows.

C. L. ALSBERG.

Letter above referred to just received; quote the following from it:

"We note the custom of your association, and in that connection your attention is particularly called to paragraph H, as suggesting a convenient method of branding which will meet your conditions. The statement of weight, however, should be that of the contents, *exclusive of the wooden frame.*"

F. RAUCHFUSS.

MISCELLANEOUS NEWS ITEMS

Ohio Field-Days at Medina.—On July 9 and 10, there are to be two field days at Medina, Ohio. This has been arranged by the Ohio State Beekeepers' Association.

As Medina is the home of the A. I. Root Company and of our progressive contemporary, Gleanings in Bee Culture, there will no doubt be a large attendance. One of the Dadants will be present if possible.

Canadian Bee Paper.—The Canadian Horticulturist and Beekeeper is a very pretty magazine, and contains a lot of interesting matter. We commend it to our friends on both sides of the line. It is published monthly at Peterboro, Ont., and is the organ of the Ontario Beekeepers' Association.

Association Formed in California.—Beekeepers of Independence, Calif., and vicinity have formed the "Independence Honey-Producers' Club," patterned somewhat after the Colorado Honey-Producers' Association. Their main object is to get fair and reasonable prices for their honey. Wm. Muth-Rasmussen, of Independence, is the manager.

An Ontario Field Meet.—An invitation from the Ontario beekeepers to meet with them May 25, Victoria Day, at the Forks of Credit, situated in a very romantic spot, was accepted by me, and gave me an opportunity of testing the hospitality of Ontario beekeepers.

In spite of a rainy morning and exceedingly cool weather, some 80 persons gathered at 10 a.m. at the place of meeting, one of the apiaries of the well-known, active Mr. Sibbald, whom I had met before at the Ontario convention.

The overcast skies cleared as the crowd reached the place of meeting, and opportunity was furnished to visit the neighboring hills which are very picturesque. The dandelions, wild and domestic apple trees and numerous

A PART OF THE CROWD IN ATTENDANCE AT THE TORONTO FIELD DAY.

bushes were in full bloom and the bees were harvesting honey.

Plentiful lunches had been provided by the ladies' committee, so that both the noon and evening meals were enjoyed at the apiary, under the welcome shade of maple trees, right by the leaping, clear stream.

The secretary, Mr. Hopper, who is certainly true to his name, was indefatigable. He attended to everything, was everywhere, and saw to everybody's comfort.

A better president could not be found than the genial, broad-breasted and broad-hearted Irishman, Mr. G. R. Chapman. To meet him is to like him.

The only regret in this occasion was the absence of both Messrs. J. L. Byer and E. R. Root, whom press of work at this busy date held to their post.

Why should we not have more of these field meets everywhere? The Iowa beekeepers have planned several for the present summer. Let each State do the same, and the beekeepers will become better acquainted with one another, besides enjoying an occasional day of rest.

On the way home, I met a fellow traveler who turned out to be an active advertising agent. Born in France, educated in Philadelphia, he is constantly on the move, and, having a very thorough education, he appreciates all progressive things. He had read Maeterlink on the bee, and asked many questions concerning our industry. I should not mention this occurrence, had I not received from this gentleman some very good suggestions that the beekeepers need to consider.

While sitting with him in the dining coach, I called his attention to the article "honey" on the bill of fare. This honey, put up by the Root people, is excellent and a very good advertisement. He tried a portion, at my suggestion, and wondered why people did not consume more of it.

"Did it ever strike you that your beekeepers ought to join together and advertise their product? Honey is not a staple because it is a luxury. But it is better than 99 hundredths of the sweets which are sold so extensively. Luxuries will not sell nowadays unless they are advertised. I know this by experience, and I know also how profitable it is to advertise. Spearmint gum, the sale of which I have helped to push, is only one particular grade of gum, neither better nor worse than any other. It sells because it has been largely advertised. Its sales, of $300 per month a few years ago, now run to about $2,000,000 per year. Postum, a product inferior to coffee, has been advertised with an expense of some $2000 per year. In 18 years they have made $20,000,000 of profit out of it. What could be done with as meritorious an article as 'honey' by advertising it, when you can quote even the Bible in its favor? A few thousand dollars, spent by the beekeepers each year, would create a demand that you could not fully supply."

Dear readers, this is true. As Mr. Byer said, in the June number, beekeepers cannot advertise personally, but why can we not join hands to do so? An expenditure of $2000 per year would be small if it could be sustained by the entire fraternity of those who make the growing of bees their principal occupation. Perhaps less than one-fourth of one percent of the actual value of our product would enhance the price and quicken the sales, so as to prove of immense benefit to all of us.

Mr. Williams, the present secretary of the National, has urged some such scheme. The "Honey Producers' League," a few years ago, embarked in an effort of this kind. Their attempt was misunderstood and disregarded by the beekeepers. Yet some similar arrangement must be made by the rank and file before we can expect as much demand for our goods as there exists for some of the vilest compounds that are palmed upon a credulous people.

The Speakers and Organizers of the Toronto Field Day.

◆

Field Meet in Eastern Illinois.—The 5th annual Beekeepers' Day will be held under the auspices of the Eastern Beekeepers' Association Saturday, July 11, in the apiary of H. S. Duby, at St Anne, Ill. We hope this meeting will be the best ever held both in point of attendance and in interest. State Inspectors Kildow and Pyles will be present, as will also a number of prominent bee men. Two colonies of diseased bees will be on the ground, and those present will be asked to state the kind of disease the bees are afflicted with. Lectures will also be given in the afternoon in the yard, and at night in the hall.

These meetings are gotten up to educate the beekeepers, and as many as possible should make an effort to be present and take advantage of the opportunity. Clarence Dyon, *Sec.*
Walter Sorenson, *Pres.*

◆

Honey to Remove Warts.—Doctors often warn the public against the use of acids to destroy warts, as such a remedy occasionally causes cancer. A few applications of honey made at night upon contaminated hands have shown the efficacy of this cheap and inoffensive remedy.—Bulletin de la Société Romande.

◆

New Jersey Beekeepers Summer Meeting.—A summer meeting of the New Jersey Beekeeepers' Association will be held on July 8 at the apiary of Robert Spicer, of Wharton, Morris Co., N. J. It is reached by the D. L. & W. and C. of N. J. railroads. An interesting program is being prepared.
E. G. Carr, *Sec.-Treas.*

◆

Beekeepers' Picnic at McGregor, Iowa.—May 19, the first of the Iowa picnics was held at a little summer resort known as McGregor Heights, situated on the top of a high Iowa bluff overlooking the confluence of the Wisconsin and Mississippi rivers. It is one of the most scenic spots on the Upper river, and well adapted for public gatherings, as it is close to town and is provided with a pavilion.

About 50 beekeepers and their families from different points in northeastern Iowa and southwestern Wisconsin attended the picnic. Most of them came by automobile. The day was a perfect May day. Everybody had brought baskets full of good things, and lunch was spread on tables on the brow of the hill. Following the dinner, addresses were given by N. E. France, of Platteville, Wis., who has been inspector of apiaries in the Badger State for 18 years, J. Alfred Holmberg, of St. Paul, State Inspector of Minnesota, and also by Mr. Pellett.

Mr. France spoke on the "Control of Bee Diseases." He has been making an intimate study of foul brood, which has appeared in some localities in Wisconsin and Iowa along the Mississippi river. During his talk he incidentally brought to light the fact that though the bee industry is little exploited as compared with other agricultural forms of production, yet for every bushel of apples grown in Wisconsin in 1913, 16 pounds of honey was produced.

Inspector Pellett told of the growing interest Iowa farmers are taking in bees, and predicted a big expansion of the industry in the State, as climatic conditions are admirably well suited to the purpose.

Picnics similar to the one held on McGregor Heights have been arranged by Mr. Pellett for Forest City, Iowa, June 17; Delmar, July 7; Des Moines, July 15; Mt. Pleasant, July 28; Clarinda, Aug. 12, and Sioux City Aug. 20. It was voted at the McGregor meeting to hold another picnic at this place next May. A much larger attendance undoubtedly will be had.
FLORENCE L. CLARK.

Large Apiaries Most Popular in Porto Rico.—Fortunately for the future of the industry, the apiaries now established in Porto Rico are usually large, and most of the beekeepers are planning to increase both their size and their number. Amateur beekeepers, so common in the east of the United States, are conspicuous by their absence. Almost all of the present beekeepers are Porto Rican, only a few Americans being interested so far.

Beekeeping had not developed in Porto Rico to any extent before the American occupation in 1898, but since that event the building of good roads has enabled more individuals to introduce modern methods profitably. Beekeeping in Porto Rico should, however, be done on a large scale, according to the Department's investigators, because of the distance from the market. It, therefore, seems advisable to encourage professional beekeepers rather than those who keep small apiaries of about half a dozen colonies, because the beekeepers usually sell their product for too little a price, and are not interested in a financial way.

The fact that most of the beekeepers have had but two or three years' experience, makes it all the more remarkable that they have prospered as well as they have. The corporation plan of beekeeping, in which the individual keepers unite to form companies, has not yet taken hold in Porto Rico, but will very probably be undertaken after the keepers have had more experience. The problem of long distance for shipping supplies and crops will be aided by such co-operation. In 1901, Porto Rico shipped $46 worth of beeswax out of the country. From June, 1913, to January, 1914, beeswax was exported to the United States from Porto Rico valued at $5620. For the whole of 1913 the export of beeswax to the United States was worth only $6425, which shows the rapid increase of exports just during the past year.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

More Work to Produce Comb Honey

What a lot of work there is to be done with comb honey! Producers of extracted honey have a comparatively easy time of it. Especially is this difference felt in getting ready for the crop. If you produce extracted honey, you simply put your extracting combs on the hive, and there you are. But if you produce comb honey you must clean your supers, with whatever pertains to them, wet your sections, put them together, fasten the foundation in them, put them in supers, and then put in separators and wedge them in. All of this takes a good deal of time. It may be of interest to tell the actual time needed for some of the important parts of the work, according to observations that have been taken.

Before the sections are put together it may or it may not be necessary to wet them. It is better to get along without wetting them, not only to save the time and trouble, but because there is some danger that when they are wet not only the grooves but sometimes the parts to which the foundation is to be fastened are wet, and that may make bad work about the foundation adhering. If, however, the wood of the sections be very dry, then it may be neccessary to wet the grooves to avoid loss by breaking.

It makes some difference whether the weather is very dry or wet. Also it makes a difference whether the sections are kept in a dry or a damp place. They may be put in a damp cellar for a few days before making. Keeping a damp sheet over them will help. If they must be wet, it may be done in a wholesale way, so that the time taken

BEEKEEPERS' PICNIC AT MCGREGOR, IOWA, MAY 19.

will not count for much. Before being taken out of the box a fine stream of boiling water can be poured along the line of the grooves, the water going clear down through the whole of the box.

Putting the sections together with the Hubbard machine does not count for such a great deal, for it can be done by any one without experience, even by a child. Putting foundation in the sections, however, is a matter of some skill, and practice is needed. The work of putting foundation in a superful of sections, 24, was timed, and the fastest was 3 minutes 32 seconds. This included putting in a bottom-starter and a top-starter in each section and then putting the section in the T-super. A Miller "super-filler" was used, so it took no more time to put the sections in the super than to set them on a board, perhaps not so much time.

But before the foundation is put in the sections it must be cut the right size, and before it is cut it must be stripped of the paper that is used in packing. The makers of foundation seem to take delight in making this stripping as difficult as possible. Formerly a sheet of paper was merely laid between the sheets of foundation, and one could take hold of the edges of the paper and shake out the sheets, doing it quite rapidly after some practice. Then they conceived the idea of wrapping the paper around each alternate sheet, and one can imagine them chuckling with glee at the thought of making the stripping so much harder. There is no way but to strip each sheet separately, and one begrudges the time for it. The fastest that could be done was to strip enough foundation for 480 sections, or 20 supers, in 16 minutes.

The thin super foundation generally comes in sheets 15½x3⅞ inches (a pound being enough to fill 120 sections), allowing each strip 4 top-starters 3¼ inches deep, and 4 bottom-starters ⅝-inch deep. To cut enough to fill 480 sections, or 20 supers, the fastest time was 18 minutes. For such speed, however, everything must be just right. If the wax be too cold it will be brittle and break. Even if not cold enough to break, it may be so cold that it will take three strokes of the knife instead of two to go through six thicknesses of foundation. If too warm, the foundation will bend and crumple under the knife.

Instead of first stripping a large lot, and then cutting it afterward, it is perhaps better to strip only 12 sheets at a time, and then cut it, two piles of six sheets each being laid side by side.

Then after the foundation is put in sections and the sections put in supers, separators must be put in the super, also follower and super spring. The fastest time for this was 55 seconds to a super.

Let us now add up the time taken to get ready a super to put on the hive. Leaving out the time needed in some cases for wetting the sections, and also for folding the sections, and taking 20 supers at a time, it has taken 16 minutes for stripping, 18 minutes for cutting, 70⅔ minutes for putting in top and bottom starters, and 18⅓ minutes for separatoring. That makes 2 hours 3 minutes for 20 supers, or 6 minutes 9 seconds to a super. For 1000 sections it would take 4 hours 16 minutes. In a day's work of 10 hours, that would allow 2341 sections to get ready, or about 97½ supers. Note, however, that this is speeding to the limit, and for steady work it would be only fair to allow about half more time. Indeed one should not be greatly discouraged if one took twice as much time. Of course, some one might make faster work, but the rate mentioned is going some.

This work must be counted on by one who produces comb honey, and this work is spared to the one who produces extracted honey.

Black Sage and Wild Buckwheat.

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Our Deep Bottom-Board—How Made

Inquiries have been made as to our deep bottom-boards, especially as to how they are made, and one man even wanted to have a sample sent to California. They are so very simple in construction that a sample is not at all necessary. Here is what is said about it in "Fifty Years Among the Bees:"

"The bottom-board is a plain box, 2 inches deep, open at one end. It is made of six pieces of ⅞-inch stuff; two pieces 22½x2, one piece 12⅛x2, and three pieces 13⅞x7½. When so desired the bottom-board is fastened to the hive by means of four staples 1½ inches wide, with points ¾-inch long.

"With such a bottom-board there is a space 2 inches deep under the bottom-bars, a very nice thing in winter, and at any time when there is no danger of bees building down, but quite too deep for harvest-time. Formerly I made the bottom-board reversible, reversing it in summer so as to use the

Wild Alfalfa at the Left.

shallow side, but latterly I leave the deep side up summer and winter.

"Of course, with a 2-inch space under the bottom-bars the bees would build down, sometimes even as early as dandelion bloom. Before that time I shove under the bottom-bars a bottom-rack. As material for a rack there are two pieces 18x1x¾, and 21 pieces 10½x⅜x⅜. The little pieces are nailed upon the ¾-inch sides of the two larger pieces, ladder-fashion, with ½-inch space between each two strips. The strips are allowed to project over at each side about an inch.

"I value this bottom-rack highly. It prevents building down, and at the same time gives the bees nearly the full benefit of the deep space, preventing over-heating in hot weather, thus serving as no small factor in the prevention of swarming. It also saves the labor of lifting the hive off the bottom-board and then lifting the hive back again, spring and fall."

Something additional might be said, both for and against this bottom-board. In winter, it is hard to conceive of anything better. In the cellar that 2x12 entrance gives opportunity for the fullest ventilation of the hive, and there is never any danger of its being clogged with dead bees, even though it should never be cleaned out through the entire winter. It is a nice thing, however, to be able to clean out any dead bees that may at any time be found on the floor of the hive, and for this the deep space gives plenty of opportunity, while with a space not more than ¾-inch deep it is rather difficult, especially when the cluster of live bees reaches down to the floor.

For outdoor wintering this deep space is also a fine thing. It prevents clogging with dead bees, and allows them to be cleaned out easily. Of course only a small part of the opening will be left open through winter, what is left may be either at the lower or upper part of the entrance.

On the other hand, it must be confessed that during the summer season the action of the bottom-rack is not always perfect. There is more or less building of comb below, although of course nothing compared with what would be built in a 2-inch space without the rack. Doubtless the rack might be so made as to prevent all building down.

If one does not mind the labor of lifting the hive, it would doubtless be better to dispense with the bottom-rack altogether, and then when hot weather comes to reverse the bottom-board, putting blocks under each corner of the hive. Experiment would determine just how high the hive could be thus raised without any danger of building down. Like enough it might be an inch, possibly more. At any rate, with all four sides open there would be less danger of building down than with only one side open, and more ventilation. Indeed some have reported freedom from swarming when full opening at front and rear was allowed. But when we have had hives thus blocked up there has been some trouble with bees coming out at the side, when we were working at the hive. Also it makes trouble about finding the clipped queen when a swarm issues. But it is a good deal of trouble to draw the staples at the beginning of the season, lift the hive off the bottom-board, reverse the latter and then lift the hive on again, and then in the fall to drive in the staples again, lifting the hive twice. Yet *if* it would prevent swarming, there would be big pay for the trouble.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

Planting of Eucalyptus for Honey Production in Southern California

While it has never been considered profitable to plant nectar-producing plants on land that can be made to produce other crops, it would be a wise economy to utilize waste land in this way. On all the mountain bee ranches in southern California there is considerable waste land. Much of it is too steep to till. In places small flats and slopes are too small in themselves to make tillage for any crop a profit, but in the aggregate would make a total of considerable value if planted to something of permanence. The planting of different species of eucalyptus on such land would be both profitable to the beekeeper and add much to the beauty of his holding. The dull green of the eucalyptus blends harmoniously with our native shrubs and trees, and from a practical standpoint the more trees we can grow in southern California the better.

Of course, I do not mean to clear the land of any of our native honey plants, but there is much land on every mountain ranch that could be cleared of unprofitable brush and planted to something of value. The artemisia, for instance, has spread to an alarming extent in the last few years. Its only use is for winter pollen, but there will always be plenty of it left. It is easily grubbed out, and its place could be filled by a better plant with little trouble and much profit.

WHITE SAGE.

The various species of eucalyptus would be a fine cover for such land, and once established would need no further care. Scattered, or in thinly planted groves, these trees would yield nectar for the bees, and are valuable

BLACK SAGE.

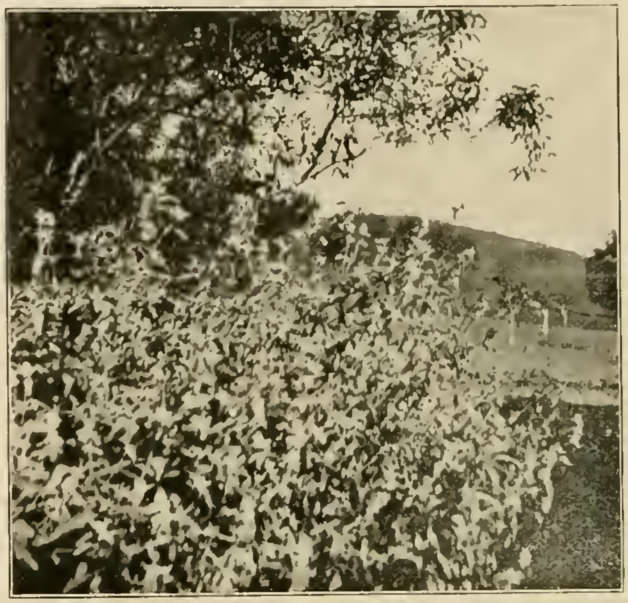
for a number of uses as timber. The reason I say thinly planted is because the thickly planted groves do not bloom freely. The eucalyptus when cut down send up numerous sprouts from the root which grow rapidly, and are old enough to bloom again in a few years. All are useful, and many species very ornamental.

This tree is one of the many valuable things which we have received from Australia. It was first brought to California before 1856, and there are now many old groves in the State. The timber is hard wood. There is an oil extracted from the leaves and twigs, which is used quite extensively as a medicine.

The eucalyptus, that is most species, is strongly drouth resistant. Of course the little seedlings must be given a proper start. Where it is not practiced to give them water the first summer, they should be set out early in the winter, after the first rains, and sheltered in some way from the dry winds until well started. Being deep-rooted trees instead of shallow-rooted shrubs as our native honey plants, the eucalyptus are able to reach moisture in the soil, which enables them to bloom and secrete nectar even during seasons of drouth. I have seen the bees like a swarm on the bloom of the "sugar gum," *E. corynocalyx*, in August and September of a dry year. An Australian beekeeper who once visited me said, "The yellow box (*E. melliodora*) is our main source of honey supply in my part of Australia. Your shallow-rooted Californian plants would produce no nectar in that climate." I asked him about the quality of the honey, and he said it was good. Personally, I cannot give information as to the quality, as I have not as yet any trees but the autumn and winter bloomers, but have no doubt he was correct.

The chief value here in the eucalyptus honey would be to supply the bees at times when our native plants failed, for when there is a good flow of sage nectar, for instance, they leave all else for that. But for dry years and a source of fall and early winter supply, the eucalyptus would certainly be a boon to us if we had enough of them. They are profuse bloomers, and as far as I have observed always secrete an abundance of nectar.

The *E. melliodora*, or yellow box, as it is usually called in Australia, has a profusion of honey-scented blossoms which gives it its specific name. It will grow in a variety of soil conditions, and is a valuable tree. Professor McClatchie, horticulturist of the Arizona Experiment Station, spoke of it in the highest terms for this purpose. Ingham, of the Experiment Station at Santa Monica, Calif., says all the species have value as honey producers, and that from the large number of species now in the State, species can be selected so there are some in bloom during the entire year, if so desired, so if the natural pasture is good for only a limited time the dearth could be so filled in that there would always be something for the bees to work upon.


Purple Sage.

California Sumac.

There are about 150 species of eucalyptus in their native home, of which we have adopted about 75, either as permanent citizens or on trial at our stations. The Forestry Station Bulletin gives a list which would be suitable for bee forage and their time of blooming. There are several that bloom for a period of several months. The *E. melliodora* is listed as blooming from January to June. They mention the fact that the bees seem to have a preference for the white or greenish-white flowers. Most of the eucalyptus have white flowers, though there are several species with colored blossoms which are very beautiful. I have a single tree of leucoxylon-rosea with beautiful rose-colored flowers which is a great favorite with the bees. It blooms from late autumn, varying with the early or late rainfall. It is a very ornamental tree, and very hardy as to frost and drouth.

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Weather Cool, But Most Colonies Strong

The weather continues cool and cloudy. Bees are not able to be out full time. The nights are too cold for a good nectar flow. Black sage is nearly out. It has yielded us some honey, but not a half crop in sight yet. White sage is coming in, but we are at a stand-still just now on account of the weather. Some honey has been extracted from most all of our apiaries, but we have had to quit until there come some bright days. Most colonies are strong.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Buckwheat in Colorado—Mr. F. W. Brainard, of Canon City, and Wesley Foster, State Inspector, admiring the patch.

Shipping Bees in Combless Packages from Southern New Mexico to Colorado

I told in the June number of the American Bee Journal of the results of shipping bees in combless packages from southern New Mexico to Colorado. Since writing that I have had some experience. The weather was warmer, and some shipments came through in very bad order. I had 100 2-pound packages sent to my apiaries in southwestern Colorado, and there are, out of the 100, 65 good ones and 11 weak ones, making 76 in all. There was a total loss of 24, and a partial loss in 11. One shipment of 27 had 20 packages entirely lost.

In a shipment of two packages to Boulder during some of the hot weather, one of them was almost a total loss. It will be seen that the loss has averaged one-fourth, and that is heavier than should be had to make a real success of the venture. By perfecting the watering can, and having the feed can better protected the loss may be cut down considerably. The feed cans being tacked on get knocked off easily.

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Post Cards Showing Different Grades of Comb Honey

The Colorado Honey-Producers' Association has put out one of the neatest post cards I have seen, quality of work considered. It shows three cases of comb honey graded according to the Colorado rules. The shading and color work is about all that could be desired White, Choice, and No. 2 are each represented in their characteristic qualities of finish, color and filling. The grain of the sugar pine shipping cases in a color printing job. The No. 1 shows so plainly that this strongly built western made case is well pictured.

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Crop Prospects

Crop prospects still are favorable, although severe hailstorms have visited the district around Windsor in northern Colorado, and also in the Arkansas valley between Fowler and Lamar. The loss of bees from smelter smoke (some think the city smoke may have something to do with it) has weakened hundreds of colonies in and about Denver. Several hundred colonies were weakened from the effects of spraying in the Cedaredge district of Delta county. There was a slight loss from spray poisoning in and about Boulder. One or two parties who did custom spraying for their neighbors wanted as long a season as possible and began before the petals had fallen.

Bees bred up so rapidly that many colonies became short of honey about the first of June, and the first week in June was a busy time for some of us who had to feed promptly to save the bees and brood. As it was some colonies were lost in spite of what we could do. Alfalfa has begun blooming and yielding nectar so that the danger of starvation is probably past.

Bees near the foothills have been swarming for three weeks, and when they are hauled to the alfalfa districts should do good work.

Take it all together there is little yet to change in regard to prospects—we should have a crop of fair proportions in Colorado this year; alfalfa and sweet clover are showing a very luxurious growth, and sweet clover will bloom this year about July 1. The rainfall is now over 3 inches above normal for this year. We have had over 10 inches since Jan. 1, which is doing very well for Colorado.

Trout Lake, Colo., between Montrose and the Montezuma Valley.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Dry in Ontario

Weather is very dry, and clover short and scarce. This describes conditions at present in many sections of Ontario, our own locality among the number. Unless rain comes soon the crop of honey from clover must be light, as the stunted plants will not stay long in bloom even if they should yield nectar. Bees are generally in good condition, so even if the flow should be short chances are good for a light yield, provided there is honey in the clover.

Aside from this year's prospects, rain would be welcome, as with continued dry weather the fresh seeding done this spring will kill out, and alsike will be scarce again next year. Unless we get rains soon the buckwheat will be a failure, too, so naturally we are hoping for abundant rains in the near future. Who knows but what we may be having more rain than we want within the next month?

Save Your Beeswax

Good advice on page 189, to save all the beeswax from scraps of combs, bur combs, etc. Wax is worth just as much in Canada as it is in the United States, if not more. During my years of inspection work I was often amazed at the appalling waste of good wax. The market is always good, and seems to be getting better each year, owing no doubt to the fact that new uses are being found all the time for the product, and while there is a possibility, yes, a probability, of the over-production of honey, I hardly think such a thing will happen to the market for wax for many a year to come.

Long Life Dependent Upon Work and Moderate Living

Last week it was my privilege to shake hands with a beekeeper who is 106 years of age. He was out in the yard among the bees at the time, and my regret is that I did not have my camera so that I could have his picture, as I hardly expect to see so old a man again in the possession of his faculties. His eye-sight seemed fairly good, as he had no glasses on, and as for his hearing, he conversed readily with me. Seemingly, bee stings have not had a bad effect on his health. Most wonderful to relate this, man, at the age of 106, lives all alone and prepares some of his own meals, although he informed me that his son on the farm did his cooking as a rule. The gentleman in question is Mr. O'Neill, of Uxbridge, Ont., well known in all that section of country, having lived there as a blacksmith and beekeeper for many years. Born in Ireland, he comes of a hardy stock, and has worked hard all his days, shoeing a horse only a short time ago.

I wonder how many pampered sons of rich men, who know not what toil is, would be alive at over 100. Truly, work coupled with temperate living is the secret of good health and long life.

Equalizing at Clover Flow

Some have asked as to the advisability of equalizing colonies at clover flow. While this may be too late for many localities, a word on the subject may not be out of place. As a general rule it is not good policy to do equalizing before clover flow, for weak colonies never want for brood provided the queen is in normal condition, and to give more brood to such colonies would be simply making the situation worse instead of improving it. Even when the clover flow comes on I would not think of doctoring up very weak colonies at the expense of stronger ones, as it would be a losing game.

But often there may be colonies not quite strong enough for the supers, while others may be so very strong that you know swarming will occur no matter what plan is taken to avoid it. In such cases I like to equalize by taking from these extra strong colonies enough brood to fill out the medium colonies so that all will be in shape for the flow. Done at the right time, manipulations of this kind pay well for the trouble, for in addition to holding back the extra strong from swarming all of the apiary will be nearer alike, and much will be gained at extracting time by having the yard in uniform condition.

One year shortly after starting to keep bees, winter and spring conditions were extremely bad, and losses were heavy all around us. My own bees were mostly alive, but at opening of the flow the colonies were not ready to take advantage of it. After sizing up the situation I decided to make a judicious doubling, reducing the strong colonies to about two-thirds of the original number, leaving the other one-third with their field bees and queen, but with little brood. The colonies strengthened were in fine shape just at the time of the short flow we had that year, and I secured a nice crop.

The apiaries near me left alone stored very little. Such a condition may never occur again, but it shows that there are times when it pays to double up. One good colony will store more honey during a short flow than will two weak ones not ready for the supers.

Soil and Climate Influence Color and Quality of Honey

An increasing acreage of alfalfa is being grown in Ontario each year, but it cuts no figure as a honey plant, yielding only lightly about one year in five, and the honey is of inferior quality.

Some take the view that soil and climate have no effect on quality of honey, but I suspect that a producer of alfalfa honey in Colorado or some other western State would not own our alfalfa product as being genuine if he compared it with that produced in his own locality. Yes, soil and climate do have an influence on quality and color of honey, whether it be alfalfa, alsike or white clover.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Too Much Brood

Mr. Wilder:—I cleaned all my supers in early spring and put in starters, but when the bees began building comb as fast as they could build it, the queens filled it with eggs, and it is all solid sheets of brood and no honey. My old box-hives are in the same condition. What shall I do, as I want honey in my supers? W. T. Burton.

Childersburg, Ala.

You will soon find out that your trouble is a good one, for you have to have a great production in bees before you can expect to gather much honey, and I would not think of cutting this fine crop of young bees out of the frames and again put in starters expecting honey, for you would almost destroy the entire field force of bees at the time the main honey flow comes on. I know it is customary with box-hive beekeepers who are not well informed, to remove in early spring, and from time to time during the season all the young bees in the comb in the supers, or whatever may be used for a storing apartment. This is a great mistake. The best thing to do is to add more storing room above this brood. Sometimes in early spring a colony dwindles down to only a small cluster of bees, and the queen deserts her old quarters below and goes into the super above, and establishes her quarters there for a while, but as soon as the colony is sufficiently strong it will go below again, and the bees will fill the super with honey, but in such cases the super of brood should be placed under the main hive-body which contained the old brood-nest, and the queen will enter it much sooner.

In early spring our first apiary work is to arrange the queen's quarters at the bottom of the hive, where supers and hive-bodies are left on over winter, giving her a super or hive-body of combs just above her quarters at each visit. The result is a wonderful production of bees, and by the time the main honey flow comes on the bees are ready for it.

The great trouble with the average beekeeper is he hasn't supers enough. One super for each colony is not more than one-third enough. Of course, in your case the queen will soon be forced out of the super to give storing room. The honey in these combs will be dark and spoil the appearance of your comb honey, but you can strain or extract it and you will have a better article.

Mr. Ruffy Examining for a Freshly Introduced Queen.

Hurrah for the South!

"I wish I could go South and enter the beekeeping industry, for I am much interested in bees and have been all my life. In fact, I have always had them, and have considerable experience in modern beekeeping. I am truly an enthusiast. If I had southern bee experience, I would publish a bee paper and call it 'Dixie Bee.' Every other section of the United States has a representative bee paper. Why not the 'Sunny South?' If it had a bee paper I would surely be a subscriber, because I believe in the South as the best section for beekeeping, especially for the queen-rearing business. 'Hurrah for the South!' Where would we be for early queens?" J. F. Coyle.

Penfield, Ill.

In some respects beekeeping in the South has advantages over the North, and beekeepers who have made a successs in the North have come South and succeeded. They have to have southern experience before they can succeed. Many have been the failures before this experience was obtained by the people who came down from the North and settled with us with beekeeping in view.

Now about the bee paper. There can be no doubt that the time is not far distant when a good bee paper could be published here successfully. We are greatly in need of one even at the present time, but there is some doubt as to whether one would be sufficiently supported by those interested in our industry at present. There have been a number of attempts at this and all failed. Then, too, it is surprising to note how much the editors of the bee papers printed in the North are interested in our southland, and how much space is given for general topics along the lines of our industry here. Just now we should do all we can to help raise their subscription list.

Do Bees Have the Hook Worm?

Mr. Perry, a beekeeper in south Florida, who came there from the North and brought his bees with him, stated that while in the North his bees seemed to be very vigorous, but as soon as they reached the southland this good feature left them and had not returned, though he had been there for several seasons. He said they were inactive and sluggish, and had never at any time stored surplus honey. I suggested that they had contracted the "Florida fever," and he added they had the "hook worm." It is strange and quite noticeable that bees in portions of south Florida are more dormant or stupid than elsewhere in the South, and this applies equally to the queens. I have seen strong colonies, seemingly, without enough energy to remove the eggs and larvæ of the wax moth from the comb, and as a result the bee and its worst foe live in large numbers in the same hive. Of course their foes, sooner or later, get the best of them, but occasionally for a long period one does not seem to gain much ground over the other, although both are found in considerable quantities in the same hive. It is a little puzzling to know why such conditions exist.

The Dadants at the Mahon apiary.

The Labor Problem

Mr. Wilder:—I am much interested in your manner and methods of beekeeping, but I don't fully understand how you prevent the various persons in charge of your apiaries from "soaking you down." How do you overcome the usual laziness inherent in man, and get him to work satisfactorily? After your helpers have become proficient, why don't they get out in business for themselves? How do you manage to retain the services of a good man as general manager in your employment? I am a very extensive beekeeper myself, and I am confronted with these problems.

Two of my sons will leave for the United States soon in search of experience, and will most likely call on you.

Major Shallard.

New South Wales, Australia.

In the May number of the American Bee Journal, page 157, you will see the kind of help I employ, industrious, trustworthy men, who have obtained experience under us. I only keep a lazy man long enough to find out that he is lazy, and then he hunts another job. Every man who has come to me with experience has made a complete failure and had to surrender his job and go.

Some, on learning our methods and tasks of carrying them out, never went on the job. Some made the start, stayed for a while, but did not stay until the first flow was over. Such help usually wants $65 or $75 per month and expenses, and an apiarist cannot go into a new field and earn this much per month. The failure in such help usually lies in the expression, "Can't carry out your methods."

Well, we go for help away out in the country, and get boys from the farms, who have never lived in a town or city, and have never had but one job, and that was right with their parents. When such a boy is given a job, that is the only one he knows of, and he sticks to you and works regularly. Being accustomed to hard and constant labor on the farm, he never murmurs at any task, early and late. Such boys, as a rule, have no bad habits, and are honest. A boy who has been reared in town or city is often the reverse. He is in and out, and does not "stick to his bush."

I have a large number of applicants all the time. By and by such help will be left in sole charge of bees, sometimes working them for a salary, but usually on shares. We give a man employment for a while, say for four or six months, then let him work 200 colonies on shares for a season, then let him increase them or give him more near-by bees.

Satisfy your men in the business and let them prosper, helping them as their needs may demand. A good business man once seeing the diligence of one of my hands, offered him twice as much wages as I was paying him for his services, but it was no inducement. Once in a great while a good hand will quit without cause. The secret of success lies in the proper handling of labor.

NOTES FROM ABROAD

BY C. P DADANT.

On Aug. 18, we took the train for Delémont, accompanied by our kind friend, Mr. Gubler. We were to visit two of the most practical beekeepers in the country.

Mr. Ruffy, of Delémont, an active man, has had long experience with many races. His preference is for a mixture of Carniolans and Italians. He was for years employed in queen-breeding apiaries of Italian Switzerland. He imports his Italians from there, buying small swarms shipped with three or four caged queens in each. It is but a few hours' journey from there, and no losses are to be feared. It was he who gave me a clue to the cause of the preference of the Swiss for their bees over the Italian. I saw, from his explanation that, for the cool hill lands, the Italians breed too early and too late in the season, and fly too early and too late in the day.

Ruffy does his winter feeding much earlier than any one I ever heard of. His bees had already been fed for winter, at that date. They have no fall crop, and there was no expectation of any further harvest. The crop had been poor.

Early in the afternoon, we took the train again, accompanied by three or four beekeepers, one of whom, Mr Walther, is an amateur photographer, and to him we are indebted for many photos of apiaries, some of which we have already given and others which are yet to appear. Two ladies came along, daughters of Mr. Ruffy. At the second station we landed and had but a couple hundred yards to go to find the finest and most carefully kept apiary I had ever seen. Everything was in "apple-pie order." The owner, Mr. Mahon, an old bachelor, is a genius. We reproduce a cut of his feeder which is somewhat on the principle of the Miller feeder, with a section in the rear into which the feed is poured without disturbing the bees. Feeders are greatly used in Switzerland, because there is such a long fall season without harvest. The Swiss, like our Canadian neighbors, believe in feeding heavily for winter.

FILLING THE MAHON FEEDER.

I spoke of the neatness of Mr. Mahon's apiary. He took first prize for the best kept apiary in Western Switzland in 1902. His honey room is on the second floor of his home. The only thing I could criticize about it was its remoteness from the apiary. But I have never seen so neat an establishment anywhere, except at Mr. Penna's, at Bologna, Italy. But that is another story, and I must not spoil it by telling a part of it out of its turn.

Mr. Mahon condemns the Carniolans because of their swarming propensity. His bees are hybrids of Italians and Swiss common bees. They behaved finely, while we had our pictures taken in front of the hives (see cut). In regard to diseases, he expressed the opinion that the greater or less vitality of the queen has to do with the existence of both May diseases, which we call here paralysis, and foulbrood.

On our return to the station, we were introduced to the station agent who smilingly pointed to half a dozen hives of bees in a little shed a few yards away. It appears that a number of Swiss station agents are beekeepers.

ONE OF THE WARTMAN APIARIES AT BIENNE.

Our next trip from Boudry, the following day, took us to Peseux, a suburb of Neuchatel, at the apiary of Mr. Bonhote, mentioned already in the October number. His family castle is a building typical of the Fifteenth Century, remodeled for modern usage, with hot-water heating, bath room, etc. He has both out-of-door and indoor apiaries, and prefers the latter, of which we give a view. Since our visit he has paid us the compliment of inscribing its date upon the front wall. Rather a staggering blow to what little modesty we might possess!

Mr. Bonhote is one of the few men who have succeeded in eradicating foulbrood by the method of fumigating with salicylic acid, à la Bertrand. The reason why so few succeed is that it requires excessive care. Perhaps also there is new vigor imparted to the swarm by the McEvoy method, as claimed by Dr. Carton. Another apiarist, Mr. Chausse, who is the local bee inspector, assured me that in his practice the only positive method was to transfer the bees, burn the brood and render the combs into wax. This same party, questioned about the May disease, ventured the suggestion that it is caused by the honey from dandelion. But the May disease exists in countries where the dandelion does not appear. We have had it previous to the blooming of this plant. There are countries where the bees harvest a surplus of very bitter honey from dandelion, and there does not seem to be any extra amount of May disease there.

After bidding adieu to our old friend, Mr. Gubler, we went to Bern, passing through Bienne (Biel) where we visited for a few hours, met half a dozen beekeepers, saw some apiaries and visited the "Lacustrine Museum" under the guidance of Mr. Wartmann, a local apiarist. The wonders of this museum, which have been gathered from the bottom of the Swiss lakes, belong to the era of the "Lake Dwellers," in prehistoric times. The outlet of the lakes of Bienne and Neuchatel was deepened so as to lower the level of those lakes some 8 or 10 feet. This permitted the discovery, at the bottom of the lakes, of tools of the stone, bronze and iron ages, and of canoes dug out of trees by the lake dwellers, which are gathered in the Bienne Museum. We were also much interested by the sight of the old city fortifications which have been changed into dwellings by piercing windows in the walls.

From Bienne we reached Bern late in the afternoon, and were met at the big station by Mr. Leuenberger, the editor of the Schweizerische Bienen-Zeitung, who readily recognized us in a crowd of tourists, though we had never met. We were very sorry to have only the evening and a small part of the forenoon at Bern, for we had wanted to visit some apiaries and call upon Dr. Burri, the noted bacteriologist. We had miscalculated our time and had to leave for Zug. Our itinerary, made beforehand, compelled us to go on.

We were informed that the Swiss Bee Journal, above mentioned, has a circulation of 9075 among the beekeepers of German Switzerland. We will give more information concerning their powerful association when we get to Zurich, the home of its president.

Before starting away, the next morning, we made a hurried visit to the Capitol, the Museum, the high bridges which unite the two shores of the Aare in the city, and the bears after which the city is named. We also saw the monument, erected some 15 years ago, to celebrate the Universal Postal Union. It is in one of the parks and represents five women—the five continents—handing mail to each other around the globe. Our young men, who have been born since the organization of this Union, the seat of which is at Bern, do not realize what it has meant for the growth of international relations. It may be sufficient to tell them that, before the Union existed, or previous to 1874, the rates on letters between the United States and most countries of Europe varied between 15 and 64 cents per half ounce.

A reform which we are going to need and to which our attention was first called when in Bern, is the placing of telegraph, telephone and electric-power wires under ground instead of on poles. They told us that our system of poles throughout American cities is laughed at. But a still greater American nuisance is the smoke. None of that in Switzerland. We could travel day after day without having to suffer from cinders, smoke, and the dirt they cause. Coal slake, there, is made into bricks of which we saw piles at every station. Slake is one of the main causes of smoke. But in the shape of bricks it burns like hard coal. I believe that they also educate their firemen to a judicious use of fuel, while any man who can handle a shovel is acceptable for an American fireman.

In a previous letter I spoke of the dog nuisance. In Bern and in several other places, we saw the dogs at work.

House Apiary of Mr. E. Bonhote in Switzerland.

Large St. Bernard dogs are hitched to small wagons and help deliver produce or goods. The dog faithfully waits at the curb while his master is handing a package or a quart of milk to the housekeeper.

Zug, Mettmenstetten and Zurich were our next stopping places.

M. Mahon at Courfaivre examining his bees. First prize for best kept apiary in 1902.

CONTRIBUTED ARTICLES~

The Odor of Foul Brood

BY E. G. CARR,

Apiary Inspector for New Jersey.

THE disagreement of those undoubtedly well acquainted with both American and European foulbrood regarding the odor from colonies affected with either of these diseases has been the source of much surprise, and no little difficulty has been experienced by those attempting to differentiate the two diseases by the odor symptom alone, or relying on this as the determining factor.

The odor of American foulbrood is usually described as being like that from poor glue when heated, and is very pronounced; that is, it is more noticeable than the odor from European foulbrood, while the latter is described as a sour smell, and in some cases scarcely noticeable. One having his first experience with foulbrood is often unable to make the description fit the case.

There are two explanations for this seeming disagreement. The first is that possibly the organisms causing decay may differ with the locality and under different climatic conditions, so that in some cases the gases given off are more abundant, thus giving more odor. The second is that samples described may have been examined in the apiary in the one case and in the laboratory in the other; or, in other words, one sample was fresher than the other.

Two seasons' work in New Jersey, giving opportunity to examine plenty of both forms of the disease has shown that, in this State at least, the odor from European foulbrood when examined in the apiary is much more pronounced than that from the American form; in a great number of cases it being only necessary to lift the hive cover to detect the presence of disease, and in many cases the odor was very noticeable at a distance of several feet from the affected colony.

Samples of this form of foulbrood, when taken from the hive, have rapidly lost a large part of the odor. No case of American foulbrood examined by the writer has given such a strong or disagreeable odor as the European, when comparing colonies of about the same degree of infection, and no case of American has been found where the odor was noticeable a few feet from the hive. On the other hand, samples of the American form when taken from the hive have for a certain length of time increased in odor.

Since there exists this seeming disagreement, it is best that the odor symptom be not relied upon as a sole determining factor in differentiating these two diseases. Fortunately there is a system which is fairly constant, and upon which it seems safe to rely. This is the position of the dead larvæ in the cells. A study of the cuts in Farmers' Bulletin No. 442, shows that a majority if not all of the dead larvæ of American foulbrood lie on the lower cell wall while those of the European are found in every conceivable position in the cells. This symptom the writer has found reliable in practically all of the 867 infected colonies found in two seasons' inspection work in New Jersey.

New Egypt, N. Y.

Colony Odor

BY BYRON S. HASTINGS.

ON page 168 of the American Bee Journal for May, Mr. Arthur C. Miller says some things that I don't agree with. He says: "I admit that each colony may have its individual odor, but I deny that a bee after a long foraging trip will retain enough of it to affect her reception by an alien colony. On the contrary, every (?) observation indicates that it is wholly the individual bee's *behavior* which governs her reception.

"Here are some facts which go far to disprove the theory of the individual odor affecting a bee's reception. A worker returning laden from the field may enter anywhere." (?)

"Queenless bees will join a near-by colony with a queen, and no sign can we see that the receiving colony notices them as strangers." (?) (Question marks are my own.)

I have seen laden workers alight on the alighting-board and start into the hive just the same as any of the rest of the workers. But the guards would stop them, take their load of nectar and kill them without much resistance on the part of the strange bees, if strange they were.

A few times I have seen bees loaded with pollen alight on the alighting-board of a hive and start to enter and then leave and enter another hive. Why?

I have my queens' wings clipped. When the bees swarm, in returning, many try to enter adjoining hives and are killed. The bees are heavily laden with honey. Why are they not accepted if a laden bee may enter anywhere?

Last spring (1913) I had a queenless colony. The hives were arranged like this: No. 1 was weak, but had a queen. No. 3 was strong, but queenless. I had requeened No. 3 the year before, and the bees were much yellower than the rest of my bees. During a cool spell I set No. 3 on No. 1 with paper between. I took everything away from where No. 3 had been. The first warm day some of the bees, probably about 10 percent, came in loaded with pollen and nectar and made 2 or 3 circles, and landed at No. 4. Did No. 4 accept them? Well, if you could have seen the murdering going on there—that is all that one could call it, for the strangers were loaded too much, and were too tired to offer any resistance—you would not say that a laden worker could enter *anywhere?* Of course, I will admit that bees in an apiary mix; but I think the most of it is done by the young bees during their play spell, the first flight.

At one time I had a colony of black bees and one of Italians in the same pair of hives. One day they had their play spell at the same time, and after it was over you could not tell which had the black queen and which the Italian by the looks of the workers in the hives. From my observations it is my opinion that there is a colony odor, and that it has a great deal to do with whether a bee is accepted or rejected, at times anyway.

Brookville, Ind.

[Very few people doubt the colony odor and its recognition by the bees.—Editor.]

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Foulbrood Insurance in German Switzerland

BY H. SPUHLER.

As in almost every other country, German Switzerland suffered for years from foulbrood, and all the efforts of the apiarists were useless. They finally decided that in order to obtain satisfactory results, it would be necessary to act in a methodical manner. With this purpose in view, a foulbrood insurance was devised and made obligatory for all the members of the German Swiss Association of Beekeepers. It is organized as follows:

As head of the insuring department is a chief selected by the association, who is also a member of the Central Committee. He has the duty of instructing and superintending the inspectors of the cantons, who meet once a year. They are appointed and remunerated by the government. They direct and control the treatment of colonies. They are helped in their work by delegates whose duty is also to respond to the call of beekeepers who suspect the existence of foulbrood in their apiaries. If the disease proves to be present, the inspector is notified and a careful examination of all the colonies is made. A comb of the diseased brood is forwarded to the Federal laboratory in Berne, to ascertain the class of disease to which it belongs.

They recognize three forms of disease, stinking and non-stinking foulbrood and pickled brood. They are all treated in the same manner. After treatment, the owner is indemnified up to three-fourths of the estimated loss. He must bear one-fourth of the loss himself. In case he has used deception, the indemnity may be reduced or even entirely cut off. In any case, the inspector writes a statement and forwards it to the chief of insurance.

The maximum of value of a colony is $8.00, and the combs that are melted up and the colonies that are united are paid at 75 percent of their estimated value.

They treat the colonies at the time when the bees are all in the hive. The bees are shaken into a specially made box and put in a cool place where they are kept three days. They are fed and placed into a new hive or in their disinfected hive, with sheets of comb foundation. In cases where the destruction of the colony is advisable, the bees and combs are burnt up or buried at least 20 inches underground.

The honey is extracted if there is any, but it is not permitted to be sold. The apiarist must destroy it or consume it himself. The wax is not permitted to be used for making comb foundation. The frames may be saved provided they are boiled enough to be disinfected. The hives are purified with a solution of soda, or corrosive sublimate (mercury chloride), or quicklime, or by heat. Tools, clothing, etc., are thoroughly disinfected. The owner of the apiary is not permitted to either sell or buy bees during the same year.

The success of this method is shown by the following table:

Year	Members	Colonies	Foulbrood apiaries	Colonies diseased	Expenses francs	Indemnity francs	Per colony
1908	7035	88,741	138	347	7,500	5,581	16.00
1912	8740	115,206	114	282	4,100	2,768	9.80

This shows that, in spite of the great increase in the membership, the number of diseased apiaries and colonies has much diminished. The cases have also been less dangerous, for the indemnity has been reduced over ⅓*d*. Our beekeepers have faith in this insurance, knowing that with its help the disease will soon be vanquished after it appears. They watch their colonies with more care, and therefore discover the disease sooner. They gladly pay the small tax of one cent (5 centimes) per colony, which not only protects their unlucky brothers, but helps to protect their own apiaries.

Zurich, Switzerland.

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American Foulbrood—Disinfecting Hives and Frames

BY JOHN T. GREENE.

In the March issue of the American Bee Journal a picture of Mr. Oliver B. Finn, of Silt, Colo., is shown in the act of disinfecting a hive-body with a blow torch. This method of disinfecting is so primitive, and there is one so much better and quicker that I will give it; not that I am the originator of the method, but because I am using it with great success and also saving time.

I have, during the past four years, had occasion to disinfect hundreds of hives and hive-bodies because of the prevalence of both European and American foulbrood.

When treating European foulbrood I no longer shake the bees or disinfect the hives. I simply requeen with untested Italian queens, and if a colony is weak I give it a comb or two of capped brood with the adhering young bees. This does the business, and after a few weeks the disease has disappeared from the hive.

But in the treatment of American foulbrood the utmost care is used, and the hives and supers are burned out after the bees are shaken. I shake the first time into a hive where there are three or four empty frames and one dry comb. If there is no honey flow, we shake in the evening, and next evening shake again onto full sheets, beginning with the comb and shaking it as quickly as possible to prevent the bees from filling up on the diseased honey they may have deposited in the comb. If no honey is coming in, we feed.

In disinfecting a hive I paint it with kerosene inside and on the edges, and the hive-bodies I pile one on top of the other five high. Then I spray a little kerosene into the pile and light a piece of paper and drop it in. The result is an instant blaze. I have a pail of water and a dipper at hand, and after the inside of the bodies have charred sufficiently, which occurs in a minute or two, I dash a dipper of water in and the steam puts the fire out on the instant. When I first began to burn out hives, I made the mistake of thinking I could smother the fire with a hive cover or blanket, but at my first attempt I succeeded in getting a close shave and a partial hair-cut, and just saved myself from inhaling the flame.

I save the best of the frames, taken from the diseased colonies, after they have been boiled to remove the wax, and pile them up in the cellar of the shop where we try-out the wax. When a thousand or two have accumulated, we clean out the cooker and the Hershiser wax press and fill them with clean water, and when the water begins to boil I put in a can of concentrated lye and several pounds of washing soda, and I am ready for the frames. The cooker is filled with frames. They are boiled 10 minutes, then removed one by one with a stove poker, so as to save our hands, and are dipped into the water in the wax press. After being exposed to the air for several days they are rewired and used.

My purpose is not merely to keep the disease down, but to eliminate it.

Interlaken, N. Y.

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Canadian Beekeepers—"George R. Chapman"

BY CHAS. E. HOPPER.

Every little while I receive a letter which runs something like this: "I see by the daily paper that your association is having splendid meetings. I am the secretary of the local association here, and since we can scarcely get our members out to a meeting, I am writing you to learn how you do it. Our members are mostly drones," etc.

In reply I shall try to tell how we proceed to have a "full house" at every meeting. Just three things are needed to make an association a success. First, a first-class president. Second, a real live executive, and last, but by no means least, good papers and discussions.

The Toronto Beekeepers' Association is singularly fortunate in having at its head a man who is not only an enthusiastic beekeeper, a thorough student and a close observer, but a good executive officer. He is our publicity man, and is able to get the ear of the daily press as no one else in our association can. In consequence, we get good write-ups, and the public knows something about us, while the beekeeper becomes curious and finally joins, which is just what the society wants. No matter how good a man you may have for the president's chair, unless he has good, loyal, and enthusiastic junior officers he can do but little. Too often this important department of organization is filled by persons totally unfit for such positions.

Our society has in the past kept the secretary "on the jump," keeping up with its plans, projects, etc. Then the papers, discussions, etc., are an important department of the work of the executive. If a program is poorly "made up," some members will not attend. Their absence gives an impression of dissatisfaction, and soon the feeling spreads that the society is going down, and from then on it surely will go down. So make your subjects as interesting and inviting as possible. Get good men; men who are up in beedom to be present and discuss subjects. This will bring a full house every time.

Advertise. Spread it abroad that you are having a meeting, and tell who is going to be there, and what the bill of fare is.

Third. Good papers lead to good discussions. If you assign a subject to some person, be sure he can entertain as well as "talk bees." Then there are numerous topics to handle. In five minutes our executive proposed enough subjects for two weeks' sessions, morning and afternoon, as well as evening.

And, finally, make your announcements early. A short notice of a meeting means few members. Give them at least 10 days' time. Don't forget, Mr. Secretary, when you write to that long absent member, give him a nice little "josh." It helps, oh! wonderfully. Paint for him a picture that will make him wish the meeting were right away. When he comes, give him something to do, or he may not return so eagerly next time.

I enclose a photograph of the man who has done more for the Toronto Beekeepers' Association than any other person in it. He is *president.*

Toronto, Ont.

George R. Chapman, of Ontario.

Two Essentials in Honey-Production

BY DR. E. F. PHILLIPS.

(Extracts from an address read at the New Jersey convention.)

IN the American Bee Journal for December, 1913 (page 405-407), Miss Emma M. Wilson reports on the work and results of the season of 1913 in the apiary of Dr. C. C. Miller, in which she is a most efficient helper. Briefly the results are as follows: From 72 colonies, spring count, the average crop was 266.47 sections. One colony produced 402 sections, while only 10 colonies produced less than 200. Doctor Miller's previous high record was 300 sections, but 20 colonies surpassed this, 15 producing between 300 and 360, while the last 6 had records of 383, 384, 384, 390, 395 and 402 respectively.

This is a wonderful record. Several factors combined to produce this result, and we may first of all give due credit to an exceptional flow of nectar, weather suitable for gathering, and to a most efficient lot of bees. The bees are really entitled to more attention than they will receive at this time, for they are the result of breeding carried on by Dr. Miller for about 5 years, and in this he has had encouraging success. However, assuming a great flow of honey and good bees there is one other factor which in importance overtops the rest. This factor is Dr. Miller. Other beekeepers were in localities where there was a flow of nectar just as good, others had good bees, perhaps not so good in most cases as his, but the others did not produce this crop. It will pay us, perhaps, to find out how he did it, for there can be little doubt that there are other beekeepers who can do as well if their efforts were as well systematized.

The two essentials in honey production to which reference is made in the subject announced are (1) getting bees of the right age in time for the harvest and (2) keeping these bees in the proper physiological condition so that they get the maximum crop. These two essentials are so overwhelming and comprehensive that they include many manipulations.

I. Getting Bees for the Harvest.—Bees breed in the summer provided nectar and pollen are available, but a colony does not always reach its full strength in time to get the maximum amount from the earlier of the large flows. Plenty of northern beekeepers find strong, vigorous colonies at the close of the clover flow when they do little good (unless there is a later flow), but usually it is only in the apiaries of good beekeepers that we find strong colonies on time. This problem is essentially a northern one, for in the South and in the tropics there is less difficulty of this kind. To some extent the problem is confined to the comb-honey regions, for comb honey is best produced under conditions of heavy, rather short flows such as are found in the North.

A beekeeper cannot decide on May 1 that he will solve this problem. This decision must be made the August before, and, in fact, some of the most important steps are taken in the fall. Adequate stores must be provided so that breeding may continue rather late to permit the colony to go into winter strong in young bees.

The winter problem next confronts the beekeeper. No other problem is so full of seeming contradictions and perplexities, and no other is so difficult of solution, because of the difficulty of studying the needs and activities of the bees without producing abnormalities. Likewise no other problem in the ordinary routine of the apiary is so important when we consider the enormous loss in numbers and vitality of colonies that beekeepers experience every year.

However much I should like to tell you the key-note to success in wintering, I cannot. There are a few practical considerations which can perhaps be put in a new way. There are two ways to winter bees, out-of-doors where they are free to fly in good weather and indoors where they are protected from violent changes in temperature, but have no opportunity for flight. Probably most beekeepers in New Jersey winter out-of-doors, but I have a feeling that with an increase in the number of professional beekeepers we shall see more cellar wintering. In any event, the following considerations are pertinent. It is difficult to conceive of a colony suffering in the fall because it is packed too soon, of a colony having too much honey in winter, or of a colony being injured by leaving the protection on too long in the spring. Similarly can we conceive of a colony injured by excessive packing? The whole series of confessions and observations recorded by beekeepers points to the facts that they usually delay packing too long; they too often provide the minimum of stores, and they not unfrequently unpack and manipulate too early in the spring.

We read of feeding colonies in the winter to save them, and of opening colonies when snow is on the ground to see if they are short of stores. These things are within the range of possibilities, but they should be considered only as a last expedient in case of dire and unexcusable emergency. There is full justification for calling such manipulations bad practice. I can conceive of no condition when a properly wintered colony can be helped by any manipulation from the beekeeper between Dec. 1 and April 1, and except for fear of being considered eccentric, I should move the first date up a full month, and often put the final date a month later.

These statements apply to out-of-door wintering. We cannot speak so definitely of the cellar. There is a tendency in these days to keep cellars warmer than formerly, probably due in large part to the influence of Dr. Miller, and we can at any rate say definitely that a damp cold cellar is bad. There is also a tendency to put the colonies in the cellar earlier. The air should be dry enough so that condensed moisture will not appear on the bottom-boards.

After the long fight with cold is over the colony must begin another almost as severe. Brood rearing may be said not to occur normally until toward the end of the winter, and, in general, the longer it can be avoided the better, up to the time that the days are warm enough to permit frequent flights. When it does begin it necessitates the production of heat sufficient to keep the brood-chamber at a high temperature, and this means increased consumption of stores. Then the bees must have an abundance of honey, and they should have frequent flights. They should have every opportunity to conserve the heat generated, which means that they should not be manipulated except when absolutely necessary. We come now to the much discussed question of spring manipulations to induce brood-rearing, such as stimulative feeding and spreading of the brood. Can any better stimulation be conceived than 50 pounds of honey available for consumption? This is so much better than a pint of thin syrup occasionally or perhaps daily that one wonders why there is any discussion about it. As to spreading brood, it is avowedly dangerous, and with a good queen and bees that have wintered well we may expect the bees to rear about all the brood they can cover. Can we ask more of them? If a colony has plenty of stores and plenty of room in a well protected hive, they will provide the bees necessary later.

By these methods the increase of the brood occurs in a manner which we can describe as rational, not by fits and starts. It results in a balanced colony which is of great consideration.

The beekeeper cannot over emphasize the necessity for plenty of bees, and when we see the miserably weak colonies that are often found in the North, one may well understand why such poor financial returns are often received. The small hives, lack of protection and shortage of stores are reasons enough for this condition. Have you ever seen colonies wintered in two hive-bodies well supplied with honey and well packed come out in the spring? It does one's heart good just as it is painful to see a colony exposed in a single Danzenbaker or 8-frame hive-body, short of stores and weak in numbers just when strength is the one essential. Bees are capable of withstanding great hardship, but it is all at the expense of the crop of the next year.

If 10,000 bees will gather 10 pounds of surplus honey, arithmetic alone might indicate that 70,000 bees will gather 70 pounds of surplus. But 10,000 bees will probably almost go hungry while the 70,000 are piling up a nice surplus for their owner. However, the 70,000 must be on time, for if they arrive a few weeks too late they are consumers and not producers. Furthermore, a weak colony in spring may often be almost starving while its strong neighbor colony will not only be in better shape for the future, but it is often gathering from some mysterious sources enough to live on. Strong colonies in the spring are actually less expense to maintain than weak ones.

Geo. H. Elskamp, of Iowa, in the Act of Caging a Queen.

Geo. H Elskamp, of Maurice, Iowa, looking for a queen; his son looking on.

And when the time comes to put on comb-honey supers the strongest colonies do not delay in getting started in the supers as do the weaker ones. They may need to be encouraged with bait sections, but the chief difficulty in this regard is in persuading colonies to work in sections when they are too weak to do it economically.

II. Keeping the Bees in Proper Condition.—In all the work that is done in the spring to get colonies strong before the honey-flow, the beekeeper is usually laying up trouble for the future, for the stronger colonies are those most likely to swarm. The old conception of success in beekeeping was a large number of swarms; the present ideal is none at all. To revert to our text: Dr. Miller's increase in 1913 was 2 colonies, and I dare say he would have been satisfied with none at all. It is no longer necessary to prove that colonies which are preparing to swarm, or which do swarm gather less surplus than those of equal strength which make no efforts along that line. This is proven repeatedly, and may be considered almost axiomatic.

Mr. Demuth, in his bulletin on

"Comb Honey" (Farmers' Bulletin No. 503, United States Department of Agriculture), makes a careful analysis of the various methods employed in the control of swarming, and I shall not discuss this in detail, but shall refer you to this bulletin which every beekeeper should read. In brief the methods may be put in three classes, as follows:

1. The Removal of the Queen.—This method was formerly advocated more than at present, and the general plan was to replace the same queen after a few days. This method may also be used to advantage in requeening. It must be remembered that while earlier in the season it is desirable to have all the brood possible this is immaterial when swarming usually occurs, since the eggs laid then will usually not have time to be transformed into field bees until after the early crop is gathered. This depends upon local conditions, however, and necessitates an individual decision for each location. The fact that queenless bees often do not work with vigor must also be considered.

2. The Removal of Brood from the Hive.—We find this principle involved in the making of artificial swarms and its various modifications, and also in the various mechanical devices brought forward from time to time of which the Hand bottom-board is a late example.

3. The Separation of the Queen and the Brood Within the Hive.—This principle is found in the caging of the queen and in the placing of frames of brood above an excluder.

The relatively slow increase in the amount of brood by the methods advocated above seems less likely to induce swarming than does rapid increase by stimulative feeding and spreading of the brood.

In the production of comb honey probably more costly mistakes are made in the manipulation of the supers than anywhere else. Here reference may be made to our text, for Dr. Miller is a master in the handling of supers. A too common method is to put on a super when the combs of the brood-chamber begin to whiten at the top; then when this one is full it is removed and another empty super is put on. This leads to no end of trouble. The illustration on page 406 (American Bee Journal) of Dr. Miller's apiary during the flow shows that he had on some of his colonies as many as seven supers at one time. He advocates in a heavy flow keeping an empty super on top while there is still room below, and at the next operation the top super is put next to the brood-chamber and a new one put on top. In this way there is always room for honey as it comes in, and room to ripen it, and by the time a super is needed for storage the foundation has been partly drawn. He also always has room for the young bees to loaf (or secrete wax), and they are not down in the brood-chamber to make trouble.

The beekeeper must know the location so well that he can estimate the probability of the continuation of the flow. When the close of the flow is near at hand, he must, of course, contract the super space. Before this time arrives, however, it will be well to follow the following plan which I quote from Mr. Demuth: "Place each newly added super next to the brood-chamber, and keep the one nearest completion just above it with all the others arranged above these two, the one in which least progress has been made being on top."

Avoiding the Non-essentials.—Beekeeping is peculiar in its fascination. Few other businesses attract amateurs as does this one, and, in fact, the majority of beekeepers are engaged in the business primarily for pleasure. To idly watch the bees at work, to do for them the dozens of little tasks which seem called for, to speculate on the returns they will yield us, and especially to study the intricacies of their behavior and other natural functions are some of the pleasures known to all of us. We like to do these things, and when such pleasures no longer exist, there will be a great reduction in the number of persons who begin beekeeping.

But when beekeeping becomes a business the beekeeper must become a business man and "put away childish things." Some of the fun disappears when we are driven by the essentials to the elimination of non-essentials, but in all such things the point of view changes the outlook. The pleasure of studying activities gives way to the pleasure of accomplishment in a practical line. Perhaps the amateur enthusiast is engaged in as laudable a work as the honey-producer, but if one is a honey-producer, depending upon honey for his livelihood, then the non-essentials which are often pleasures, must go or efficiency suffers.

There is no stimulative feeding or spreading of the brood—two hive-bodies with plenty of honey take the place of that. There is no manipulation to keep up breeding late in the fall—plenty of honey does that. In fact, from the end of the crop to the beginning of the next an abundance of stores is made to take the place of the various odd jobs that the average beekeeper usually thinks are necessary.

If we knew all the details of the production of Dr. Miller's record crop of comb honey, we should find system first and last, an equipment of knowledge, the elimination of non-essentials, and the greatest emphasis on the two essentials named. Dr. Miller has reached that time in life when he can and should no longer carry the heavier burdens of his younger days. The healthy cheerful life that he lives is well known to all of us, and were it not for this he could not, at 83 years of age, care for 83 colonies with 72 of which he broke the record. Nor with all his vigor, and even with his wide knowledge of bees, could he care for this crop without a vigorous elimination of those which retard practical beekeeping, the non-essentials.

Washington, D. C.

That Chaff Hive

DR. A. F. BONNEY.

HAVING had more experience with the chaff hive than the average person, as in my short career as a beekeeper I have used almost nothing else except experimentally, and with no other object in view than to assist those who must either winter in dovetailed hives or let their bees go without protection, I take exception to the statement of Mr. Hand in the May issue of this journal, that "A noticeable feature of the chaff hive situation is that during the past quarter of a century they have been deteriorating in quality and advancing in price until in most cases the price is out of proportion to the service rendered."

If he means quality of the lumber, I will tell him that hive makers are today using stuff almost as good as they had 25 years ago, while in cypress they have available a wood vastly better than pine. If he means the protection feature, the hive of today is better for the purpose than the immense masses of lumber put out at first under the name of chaff hive. The cost of chaff or double-walled hives has not made them prohibitive to me nor hundreds of others in the country. If there was not a tendency on the part of the small beekeeper to return to the protection hive, three big firms would not be pushing them in the magazines, for it costs money to advertise. I believe that had the dovetailed hive been the high-priced one, there would be nothing but chaff hives in use, for cellaring takes vastly more skill, and the cost of a cellar is certainly prohibitive to the average beekeeper.

I cannot rid my mind of the impression that Mr. Hand is not entirely correct in his advocacy of his "convertible" hive, for I remember that it has been but a short time since he was lauding the "divisible" hive, and with one only four (?) inches deep he wrote that he did not think the limit had been yet reached. I remember this distinctly, for I wondered what a 2-inch brood frame would look like, and tried to find time to make such a hive. Again referring to his convertible hive, there is one fatal objection to it, and that is it calls for 8-frame supers. I do not know how many men there are still in the country who willingly use the 8-frame ancient box, but I know I have not one in my little yard, nor do I know of any one near me who has. To use Mr. Hand's 16-frame or larger hive for wintering, he must have an 8-frame super to get two inches protection on each side. If I were to try to use his methods I should have to build packing cases, for I use a full Langstroth hive for a super, 10-frame.

Inspired by Mr. Hand's article, and one in the Beekeepers' Review for June, 1913, by Miss Candler, I was stimulated to invent a non-swarming hive. However, the editor of the Old Reliable sat down on it painfully, but I had another trick up my sleeve, and at once turned it into a convertible hive, and it will do all that Mr. Hand claims for his, and with vastly less labor and time spent. Ten minutes will put my hive into use, and the bees are better protected and do not have to be disturbed in the spring.

Make a 16-frame to 20-frame hive. Double-wall the back only. To prepare a swarm for wintering, remove all but eight frames, put these in the middle of the hive, put in chaff division-boards, and fill the end spaces with packing, and I have in the past winter found excelsior as good as anything, easy to handle and inexpensive. Next put on super covers, then two supers and pack them, and finally the covers, and I will state here that in making one of these hives to try, a big cover is not needed, for the regular covers will serve. Now with the entrance contracted, we have the bees packed in a way that will insure good wintering, conditions being favorable.

I do not think hive manufacturers will complain when I state that there are but three double-walled hives on the market, for two of them are practically alike and made by the same firm. As to the cost, those I use are advertised at "five for $13." We buy a hive to last, and the initial cost, particularly where but few are to be bought, and I am writing for the small beekeeper, is negligible. As to the increase in cost of such hives, the argument is not good, for dovetailed hives cost now about $2.75 against $2.10 25 years ago, while the manufacturing firm of whom I got my information states "they are now better made." Everything else has advanced, and in the case of honey we get a much better price while the production has increased tremendously.

Another thing in regard to my hive, I think it is going to prove of great use in preventing swarming, working along lines laid down by Miss Candler. I have a hive to try the coming season. In the meantime I will furnish gratuitously details of construction and method of handling to any one who inquires.

Buck Grove, Iowa.

[In criticizing 8-frame hives and supers, Dr. Bonney must not forget that Dr. Miller's record crop was secured in such hives. But he manages to secure more than 8 frames of brood. The secret of success is in ample room for breeding.—Editor.]

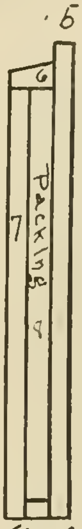


Fig. 2.

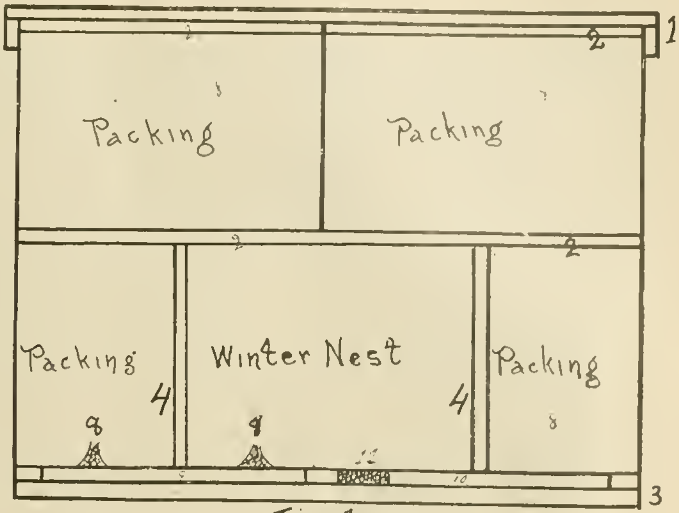


Fig 1.

Dr. Bonney's Chaff Hive.

No. 4.—Doubling the Yield of Surplus Honey

BY G. C. GREINER.

Taking it for granted that spring management has been properly attended to, the appearance of the white clover is the signal for active measures toward securing our surplus crop. All better colonies both for extracted and comb honey receive their supers at this time, and as soon as any of these show signs of incoming honey, all the rest of the yard are provided with the same appliances.

When the first-given supers are well stocked up with bees, which is generally a matter of a few days only, the equalization system, described before, is put in force. The comb-honey colonies are treated in exactly the same way as those for extracted honey, but instead of combs being exchanged, broad-frames with their contents, sections, bees and all are the manipulated parts. According to the strength of the colonies, honey flow, and the general prospect of the season, one, two, and even three of the center ones are exchanged, and this is continued until all are nearly alike in regard to working condition.

As a consequence of the equalizing manipulations, the contents of the first supers are more or less irregular. Some of the sections are being capped while the work in some others is just started. At the time being we pay no attention to this, but give all the colonies their second super, placed under the first one. As soon as the outer rows of sections in this first super are well under way, something like No. 2 of the illustration, the third super is given and a bee-escape slipped under the upper one. This crowds all the forces into the lower two supers, and the foundation in the last one is at once taken possession of. There is no particular hurry of removing the supers over the bee-escapes. Give the bees time to leave them at their leisure. Whenever convenient they are taken to the honey-house and sorted over—a job I generally do the next morning before other work is crowding. The full sections, if any, are stored for market, the next grade for being capped later on, and the most backward ones are used for bait sections in the supers as they are needed.

After the first supers have been taken care of all the following are easily managed. They are generally alike from side to side, and need little examining. A glance from the top will reveal any real backward ones that may be taken out and used as baits.

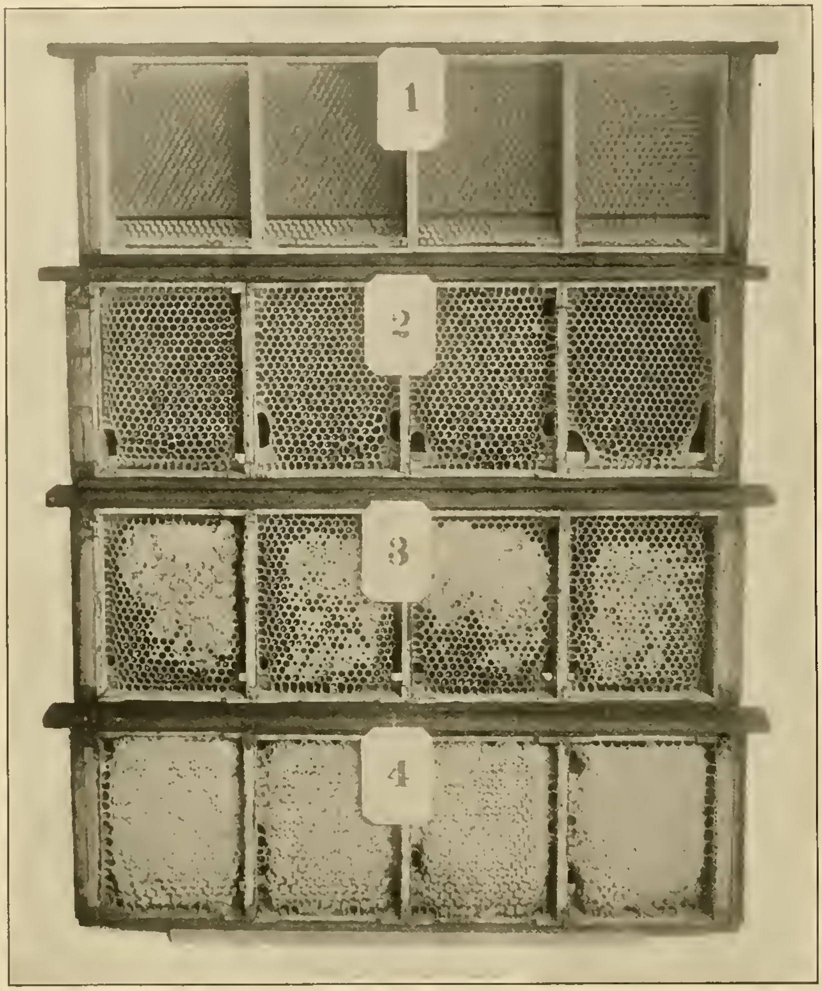
When the progress in the side rows of the second super, now the top one, are again like No. 2 of the photograph, the fourth super is given and the escape put under the upper one, as before. If this routine is closely followed up from 10 to 15 supers may be taken during a fairly good honey season from any of the better colonies. But to accomplish this, to make bees do their best, no more than two supers must be allowed on a hive at a time. All forces must be concentrated on as little space as possible, but not be crowded so as to be in one another's way. The complaint of bees not taking readily to their foundation is caused in a great measure by giving them too much room; they must be crowded onto the foundation.

The illustration of this principle is almost daily before our face and eyes. If a contractor has one-half dozen cellars to excavate, he does not send one man with a horse to one place, the same to another place, and so on, but he crowds all the help he can, without interfering with one another, onto one job, because he knows that united effort will accomplish more than scattered forces. When this job is finished another is managed in the same way until his contract is fulfilled.

The same principle applies to the super work of bees. Three, four, five, and even more supers on a hive scatter the working forces over too much territory, which discourages them, and produces "loafing," and what is still worse, it gives a portion of the bees a chance to do capping, and that must be prevented at all hazards. A hive full of brood and "capped" honey is one of the incentives to produce swarming.

As soon as the honey flow decreases, all colonies receive their feeder, and it is essential that we do not wait too long. The object is to get the bees well acquainted with them and accustomed to continue section work from this source before the flow ceases. About this time, toward the end of the flow, no more new supers are given, but instead the supers with those stored, unfinished sections are substituted. With all the forces confined to two supers, and all the feed they can carry away they finish (cap) a super in a remarkably short time, and this at a period when bees under ordinary management would be idle, not earning one cent for their owner. The capping at this advanced time of the year does not seem to induce swarming. Although nine-tenths of all my honey was capped in this way, I had not a single, normal swarm the past season.

Producing the feeding stock, which the foregoing management requires'



Sections in the four stages—Photograph by G. C. Greiner

must be governed by the kind of honey that is chosen as a specialty. If comb honey is the object exclusively, we need a very few colonies only to produce the necessary quantity of feeding honey. To decide the exact proportionate number of the yard for this purpose is more or less guess work. It depends very much, like many other features, on the season, but mainly on the alertness of the beekeeper. These colonies need only one super, but the combs must be extracted as fast as they are filled. The honey, call it "nectar" if you will, taken in this way, is just the thing for bees to work over and use for capping. Being very thin and pliable it makes bees believe they are gathering natural stores from the field. As I produce mainly extracted honey, I have not practiced the wholesale production of this article. My supply was taken from a few combs of each super, the larger part of the combs being allowed to be ripened and capped.

In the foregoing I have tried to cover the main points of my method. It remains now to say a few words in regard to the appliances I use. My whole management, from the first examination in the spring to the last feeding and preparing for winter, makes three features of my outfit obligatory, if rapid work, ease and enjoyment is our aim.

First.—Loose-hanging brood-frames. It is the greatest mystery to me that beekeepers will be hampered by any of the various self-spacing devices. Many times, when making demonstrations in my yard, I have heard such expressions as: "I wish I had your frames. What would you do if you had the Hoffman frame?" I simply explain: I would not have them. I admit that self-spacing frames offer some advantages over the loose-hanging kind, but their inconveniences impose a tenfold hindrance upon the beekeeper.

Second.—Broad-frames for section-holders. It is almost useless to say anything in their favor. Their advantages over nearly all other section-holding rigs are so apparent that seeing them manipulated convinces any person of their practicability. Changing sections back and forth from one hive to another would be a tedious job with the T super, or any other of similar construction, while the exchanging of broad-frames is like turning the leaves of a book, extremely easy and simple, after the super springs have been removed.

Third.—A serviceable bee feeder. With a few added improvements of my own the Miller feeder, made of wood, fills the bill exactly. The leaking feature of a wooden feeder, of which we hear frequent complaints, can be overcome by proper treatment. My feeders are stored under the roof on the upper floor of my honey house, where the heat during the warm spring days is almost unbearable. They season and shrink to such a state that water would run out as fast as it is turned in. When I am ready to use them I take one after another on my bench and give each nail a light tap with the round face of a little riveting hammer. Then I place them in rows on the lawn close to the honey house, and give them a thorough washing with the garden hose. That cleans out all the old remnants of granulated honey from last year's use, and by keeping them filled with water for an hour or two, half a day if necessary, I have no more trouble with leaky bee feeders for the season.

The use of paraffin, or painting them, stops the leaks for the time being, but it is not a permanent remedy. After they shrink again, they leak as before, and the operation has to be repeated the same as my washing process.

La Salle, N. Y.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Finding the Queen—Making Room—What is Good for Feeding and Brood-Rearing?

1. I opened two of my hives the other day to find the queens and clip their wings, but I couldn't find them. If there are certain methods I would like to know what they are. How would it do to place a swarm guard over the entrance, then transfer the bees, frames and all to another hive-body; shake or brush the bees from their combs in front of the hive with guard, then placing each frame back in its proper place after the bees are brushed off so that they can cluster on them again as soon as they get through the guard?

2. Here is my plan to get honey, but I have never put it into practice yet: Give each colony supers as needed until they are ready to swarm or show signs of swarming. Then find the queen and place her on a frame of brood. Put this frame of brood in an empty hive, filling out with frames of foundation or comb. On this put a queen-excluder and then the supers, placing the hive-body on top of the supers. How would it do to put a ripe cell in the bottom brood chamber on the frame of brood instead of the old queen, then cage the old queen in the top of the hive so that if the young queen is lost or fails to hatch, the old one can be liberated again?

3. In taking a ripe cell from one hive and putting it in another where there is no

queen, is it necessary to protect it in any way?

4. Do you think soft sugar is as good to stimulate brood rearing as syrup? Is it as good for winter stores? Is soft brown sugar all right for bees? TENNESSEE

ANSWERS.—1. There is no special trick in finding queens. Just take out one frame after another and look carefully, first on the side opposite you, then on the side nearest. If you are gentle about it, and don't get the bees stirred up with too much jarring or smoke, you will generally spot her the first time looking the frames over. If you don't get her after looking the frames over two or three times, you may as well close the hive until an hour or more later, or until another day, for sometimes a queen hides in some mysterious way and cannot be found, and then the next time you open the hive she may be found on the first frame taken out. If, however, for some reason it is very important that you get her at once, then the plan you suggest will work all right.

2. I don't know for certain, but I think it might work all right, provided your supers contain extracting-combs. If they contain sections, the sections may become badly darkened with old brood-combs above them. I hardly think you need cage the old queen in the upper story, but may leave her at liberty.

3. No, unless the colony has lost its queen only 12 hours or so previously, and is not yet conscious of its queenlessness.

4. I don't know; but I should think there would be little difference between soft sugar and syrup. But neither of them is as good as honey for brood-rearing. Brown sugar is good for bees at any time when they are flying, if they will take it; but syrup of granulated sugar is better for winter.

Freezing Honey—Difference in Wintering Italian and Black Bees in Russia

1. It is a custom here in Russia to keep and sell honey in wooden tubs without any covers. Usually it granulates in October or November. It is kept all winter in buildings without stoves, where the temperature is under freezing-point. Does freezing injure the honey? Last summer I had very good honey. I took some of it, when extracting, to the house for family use. It was thick, ripe honey, which granulated hard. We ate it until Christmas, then I took some more from one of the wooden tubs in the cold building. We were much astonished to find it quite soft, and when left for some time in the warm room it nearly became liquid, and was not to be compared with the honey I took when extracting. What injured it?

2. Are Italian bees more difficult for wintering than black bees? I have one colony of Italians. In the middle of winter they began to roar in the bee-house, so much that I was obliged to take it out in the snow. The black bees, of which I have 125 colonies, are quite still now. RUSSIA.

ANSWERS.—1. Freezing does not in any way injure granulated honey. It hastens the granulation of liquid honey, and may crack the combs of comb honey. The difference in the behavior of your early and later honey may have been due to being gathered from different flowers. There is a great difference in that respect; honey from some plants granulates almost as soon as it is stored in the hive, and from others it scarcely granulates at all.

2. In this country there is considered to be little or no difference between blacks and Italians as to wintering. There may have been some special reason for the poor wintering of that one colony, and it is also possible that your blacks are used to the severe climate while the Italians are not yet acclimated.

Hiving Swarms

One of my colonies of Italian bees, on May 6, threw off a nice, strong swarm, and following advice given in a recent number of the American Bee Journal, I placed the swarm on the old stand, and the old colony close beside it, to be moved on the tenth day to a new location, 10 feet or more away. But on the seventh day it threw off a second swarm. What would you do when they act like that? VIRGINIA.

ANSWER.—I wonder if you haven't by any chance got things a little mixed. Ten days is the time given quite often for overhauling colonies to look for queen-cells, but about a week has been given a number of times as the time to move the old colony to prevent a second swarm. It is counted that the prime swarm issues about the time the first cell is sealed. Then seven or eight days after the cell is sealed the virgin emerges, and is ready to go with a swarm the next day. If, now, the old hive, which was set close beside the swarm at the time the latter was hived, be moved to a new location a week after the prime swarm issued, all the field bees will desert the old colony, joining the swarm, and the old colony being thus depleted, with honey coming in, will give up all further swarming, allowing the first virgin to kill all the others.

Sometimes, however, it happens that at the time the first cell is sealed the weather is too bad for a swarm to issue, and it issues a day or more later. That shortens the interval between the two swarms. That's what happened in your case, making the second swarm issue the seventh day. To guard against such exceptional cases (and there may be exceptions even without regard to weather) the old hive might be moved the sixth, or even the fifth day; yet the sooner the hive is moved the less certain it is to be entirely effective.

You ask what to do in a case when a second swarm actually issues. Hive it, set it close beside the hive from which it issued, or else down cellar, and next day return it to the hive from which it issued. That will probably end the matter, for by that time no more live virgins will be left in cells, but occasionally it might happen that a swarm would again issue, in which case it should be again returned.

Swarms Work Better than Old Colonies—To Make Room

1. What is the matter with my bees? I have 16 old colonies. Four or five of them started to work early in the season on wild flowers. I took off 23 pounds of comb honey from one hive the last of March. Now they are not storing a pound of honey, and will not work in the supers. On the other hand, three swarms that I hived in February are working in the supers, and one has 13 pounds of sealed comb honey and the other has 17 pounds. Why do they work better than the old colonies? Is it the queens?

2. Would bees be more likely to make more honey by adding supers all the time or by taking out the one-pound sections each time? CALIFORNIA.

ANSWERS.—1. It is a common thing for a swarm to do better work at storing than the mother colony. The latter is greatly depleted by the swarm leaving, and has a lot of brood to feed, while the swarm has most of the field bees and no brood to feed.

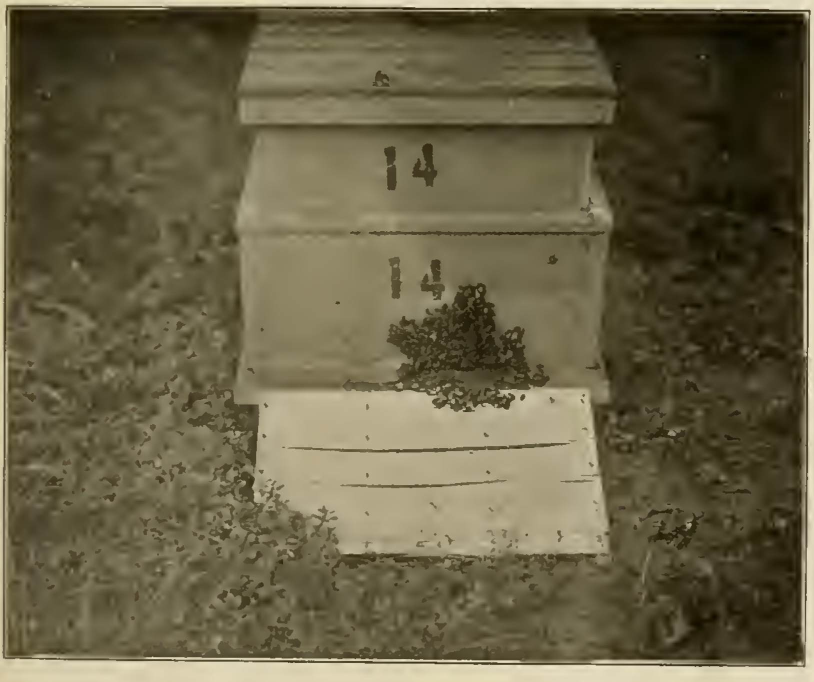
2. They will store as much one way as the other, provided they have all the room they need.

Shake Swarming—Redwood Hives

1. Last year I had a lot of trouble with runaway swarms. Can you tell me how to practice "shake swarming?"

2. I put two prime swarms of bees in a new redwood 8-frame hive. The bees immediately left for parts unknown within a few hours. Can you tell me if the smell of a redwood hive is offensive to the bees? NEBRASKA.

ANSWERS.—1. Lift the combs out of the hive, one after another, and shake the bees back into the hive, filling up the hive with empty combs, and when you have done that you have shaken a swarm. Of course you must be sure that the queen is left in the hive from which the brood has been taken. To hold the swarm in the hive it is well to leave one frame with at least a little brood. Some think it best to take this frame away after two or three days. You can make any disposition you like of the frames of brood taken away. They may be used to strengthen weak colonies, or you can use them to make



BEES BEGINNING TO HANG OUT—THEY SHOULD BE GIVEN MORE ROOM BY REMOVING THE ENTRANCE BLOCK ENTIRELY.

new colonies. If used in the latter way enough bees must be left with them so the brood will not be chilled, unless you live where it is so hot that there is no danger of chilling. The more bees, however, you can leave with the swarm, the better work it will do on surplus.

2. I have never heard of trouble about swarms staying in hives of redwood. It is possible, however, that a rank smell of new wood, even pine, might be unpleasant to bees. It is more likely, however, that the bees left the hive on account of heat. For at least two or three days extra care should be taken to keep the hive cool and well ventilated. The cover can be left partly off, the hive raised, and if not in the shade some kind of protection should be given against the sun. One way is to pile an armful of long grass or hay on top of the hive, anchoring it there with a stick or two of stovewood.

Do Red and Alsike Clover Yield Pollen?

Does red or alsike clover bear pollen, or is it an excess of nectar that blights the seed when the bees do not gather it? Idaho.

Answer.—Red and alsike clover yield both nectar and pollen; but hive-bees do not often work on red clover. An excess of nectar would do no harm; but if the clovers are not visited by insects, especially bees, there will be little or no fertilization, and so no seed. Red clover is mainly dependent on bumblebees for fertilization.

What Becomes of Old Queen in a Swarm?—The Old Reliable

About May 1, in the height of fruit bloom, my neighbor's bees swarmed, but as his queen was clipped they returned to the hive. On May 5, 6, 7, and 8 the weather was cold, cloudy and wet, but on the 9th the weather was fine, and the bees swarmed again and again returned to the hive. It was an 8-frame dovetailed hive, and just as full as it could be of bees, brood and honey. I looked through the hive very carefully for the old clipped queen, but could not find her. I found, however, six capped queen-cells and one cell which had been very recently vacated by a virgin. Owing to the congested condition of the hive I could find neither the old queen nor the virgin

Thinking that perhaps the old queen had crawled away and had been lost from the swarm that morning, and that the virgin had come out of the cell immediately after the swarm, as the bees had probably been holding her for three or four days on account of bad weather, I cut out all queen cells but one, so as to be sure not to leave them queenless, and at the same time gave them more room, putting on a deep super with full sheets of foundation.

1. Do you think the old queen crawled away and was lost? Do they ever find their way back to the hive?

2 Did I do right in leaving one queen-cell in the hive? What will happen when that queen-cell hatches? Is there any danger of after-swarming? Fruit bloom is now over.

3. Do you know of any better avocation than beekeeping for one who has about 106 degrees of bee-fever?

4. Do you know of any better bee-paper than the "old reliable" American Bee Journal? Indiana.

Answers.—1. The rule is that when a clipped queen issues with a swarm she finds her way back to the hive. Yet exceptions are unpleasantly numerous. The queen may crawl away and be lost, but is more likely to enter the wrong hive and be killed. In your case, however, it is not unlikely that the queen was court-martialed by her own bees.

2. Since you desired no swarming, it would have been better to have killed *all* cells. The fact that you didn't find the virgin was no proof that she was not there. She was probably dodging around corners laughing at you. Even a veteran sometimes fails to find a virgin. "What will happen when that queen-cell hatches?" Nothing unusual. She will simply assume her duties as reigning monarch. But something will happen—no doubt did happen—before the emergence from that cell. For it's almost a certainty that a day or so after you cut the cells the free virgin issued with a swarm, and then the other virgin emerged from her cell where she had been held captive by the workers until her rival was out of the way.

3. No; unless it be to make it a vocation.

4. Do you mean the American Bee Journal of the present day? Judging by the past I should say it is not so good as the American Bee Journal of the future, for it has kept improving in the past, and that improvement is likely to continue. Now, don't ask me in what respect it will improve. I don't know.

Best Place for Colonies—Cause of Swarms Returning to Old Hive

1. Where is the best place to put colonies in the spring when the honey crop is opening, under the roof, under a shady tree, or out in the hot sun?

2. I had a colony that swarmed twice. I put them in an up-to date hive, but each time they went back to the old hive. What was the cause? Texas.

Answers.—1. Under a tree is fine for both bees and beekeeper.

2. The likelihood is that the queen did not go with them, because of some defect. It is also possible that the old queen had been lost, and a young one reared, and that she went out on her wedding journey, the bees swarming out with her and then returning.

How to Tell Pure Honey

In the May number, in "Questions and Answers," is the question, "How do you tell whether honey is pure?" That is what I would like to know. Minnesota.

Answer.—I don't know of anything to add to the answer to which you refer, unless it be to send a sample to an expert chemist to decide.

Where is Queen in a Cluster?—Swarm Controlling—Kind of Hives

1. When bees swarm and cluster may the queen be found on the outside of the cluster, or do the workers cover her up entirely?

2. What is the best method to control swarming, when bees are run for comb honey?

3. Are single-walled hives suitable for this climate? Michigan.

Answers.—The queen may be on the outer part of the swarm, in the center, or in any part of it.

2. I don't know. I wish I did. You'll find several pages in my book, "Fifty Years Among the Bees," telling the different things I do to try to keep the bees from swarming, but too often they beat me. One way you can do is to shake a swarm. That, however, is about the same as swarming, and so is sometimes called anticipatory swarming. If you can give the colony a young laying queen about the time swarming begins, the bees having been queenless about 10 days before receiving this queen, you may be practically certain there will be no swarming until another year.

3. Sure.

Finding Queen—Requeening—Dividing—Feeder—Uniting

1. What is the best method of finding the queen, with a queen and drone-trap, or where can I find her on the brood-nest? I have looked on the frames, but I have never seen the queen.

2. What time is the best to requeen my colonies with Italian queens?

3. When forming a single or twin nucleus which is best to use, a ripe queen-cell or a virgin queen?

4. Which stock is best to order, the "3-band or 5-band?"

5. Give me some information on the terms breeder, untested and tested.

6. When making a division is it best to confine the bees, how long, the best time, and how strong should they be when divided?

7. What is the best feeder to use for any amount of feed?

8. My bees are strong, but they will not work in the supers; they want to store honey in the brood-nests. I use the Hoffman extracting frames. Are they better and cheaper than the sections? I can sell chunk honey here as well as the sections.

9. What is the best way to put in full sheets of foundation?

10. How can I keep worms out of comb?

11. I took off some honey that seemed to be ripe, and it candied.

12. Is it a good investment to buy a swarm of only half strength for a dollar and put two swarms together and let the queens fight it out?

13. When hiving two swarms should I sprinkle or smoke them to make them go in the entrance? Kentucky.

Answers.—1. This spring my assistant found each queen in my apiary, and didn't count it much of a job She is an expert at finding queens, but I don't think she has any rule about it unless it be to use as little smoke as possible. More than once I have heard her say to a cross colony, "Now you'll catch it!" and I knew by that she had just found the queen, and was giving a good blast of smoke, which she had refrained from giving until the queen was found. It is possible you have failed to find your queens because you gave so much smoke as to start the bees to running, and when that takes place it is good-by to finding a queen. You can use a trap, as you suggest, but if you expect to do much in the way of finding queens, you had better patiently continue to look over the frames that have brood in them until you become proficient. After you have looked the brood over two or three times, you may as well give it up until an hour or more later, or until another day. After a certain time of looking the queen seems to hide, and I never yet could learn the secret of her hiding. * * * Since the foregoing was written Miss Wilson has suggested that it is important to handle the frames as gently as possible, so as to give no jar whatever to hive or frames.

2. That depends. If you want to introduce a new queen so as to rear young queens from her, and want those queens as soon as possible, then you better get her as soon as possible. But it is still better to get her in advance for use the following season, getting her in July or later. Queens reared then are likely to be of the best, and you can buy cheaper than very early. If you want to requeen your whole apiary by buying queens for each colony, then you better wait until the harvest is well along, or toward its close.

3. There is little to choose. If a cell is given, the young queen is more sure of kind treatment than when a virgin is introduced. On the other hand, it sometimes happens that the virgin in the cell has imperfect wings, and she may even be dead, and when you give a virgin that has left her cell you know just what you are giving.

4. Some prefer those with more than three bands, but probably most prefer those which have three bands, like the pure stock that comes from Italy.

5. A queen rearer raises a young queen from an Italian mother, and as soon as she begins to lay he sells her as an untested queen. If he keeps her until her progeny emerge from their cells, and the number of bands on these young workers show that the

young queen is purely mated, then she is called a tested queen, and he should sell her for a greater price. A breeder is supposed to be one of the very best to breed from, and the name may mean little or much, depending upon circumstances.

6 When you desire to have bees stay in a new place, it makes a difference as to the amount of brood and bees used. If you take a single frame of brood with adhering bees from a normal colony and put it in a hive in a new place, without confinement, the likelihood is that the bees will desert. If you use five or six frames of brood with adhering bees, taking from one or from several colonies, it is pretty certain that enough bees will remain to take good care of the brood. In either case, if you fasten the bees in for two or three days, they will stay put. Better have a small entrance and then close it with green grass or leaves; then if you forget to open the entrance the bees can open it themselves when the green stuff dries. As to strength, better have two frames with adhering bees, at the very least. If you mean how strong should the divided colony be, it should have at least six frames well filled with brood.

7. If a considerable amount of feed is to be given, nothing is better than the Miller feeder. The Doolittle is excellent for smaller amounts handy for the bees. For an entrance feeder the Boardman is good.

8. Bees prefer to store in the brood-chamber so long as there is brood there, and are not likely to store in supers until after the brood-chamber is filled with brood and honey. If you can sell chunk honey as well as sections, probably you better let sections alone.

9. Full sheets are greatly to be preferred to small starters, and you ought to use sheets so large that the foundation will be fastened at the sides, and then you should use wires or foundation splints to help. If the wedge does not hold the foundation in the groove, put beside it a thin layer of wood, such as a piece of wooden separator. Or, run melted wax and rosin (about equal parts) along the place of junction.

10. There is no better place to keep comb than in the care of bees. If that is not convenient, keep them in a cool, airy place, spacing them more than ½ inch apart. If they become wormy, treat them to a dose of carbon disulphide. After being thus treated possibly you may keep them in something moth-tight.

11. All your honey will probably be sure to candy. If you heat it to 160 degrees and then seal it air-tight, it may not candy.

12. That ought to be an excellent investment. The bees will settle the queen question, but if you take no precaution a large part of the workers may be killed, too. Put one hive over the other, with a sheet of newspaper between them, and they will probably unite peaceably.

13. If you dump them at the entrance they will enter of their own accord, without smoke or sprinkling.

Queen in Two Stories—Wintering—Toads—Robbers

1. The extracted honey producers here discourage swarming by elevating brood over the excluder. Why wouldn't it be better to allow the queen to extend her nest in this super, and after swarming danger is over insert excluder, and later see that the queen is below?

2. A successful honey producer says full sheets of foundation are drawn down to the bottom-bar *very* much better when placed in a super than in the brood-nest. Is this so?

3. A Tennessee beekeeper writes that he wintered most of his 180 colonies in 2 story hives and he never had such strong colonies; some had 15 brood-frames. Why wouldn't that be the best way to do every winter?

4. What quantity of carbon disulphide should be used for a stack of eight 8-frame supers of combs, and how often should the application be made to ensure against wax worms?

5. Do toads eat bees to a damaging extent?

6 Are the goldens generally recognized as the worst robbers of all bee kind? The ones I have certainly must be; however, with the miserable slow flow we are having they are certainly getting much more honey than are my blacks. KENTUCKY.

ANSWERS.—1 When the brood is put above the excluder and the queen left below without brood, she is in much the same position as if it were a swarm in the lower story, and will not swarm. If allowed to occupy the two stories as you suggest, she is much more likely to swarm. Another thing is that by allowing her the run of the two stories you would likely have brood in the combs you want to extract, which is undesirable.

2. Sure.

3. With very strong colonies the plan is excellent.

4. Four tablespoonfuls ought to suffice. One application is sufficient, unless fresh eggs are laid in them again by the bee-moth.

5. Some cases have been reported in which quite a few bees were killed by toads.

6 I don't remember to have heard that charge against the goldens. I am afraid it's true very often that the best gatherers are inclined to be bad as robbers. Bees have no moral sense, and don't make any distinction between getting stores from the field or from another hive; so why shouldn't the best gatherers be the best—or the worst—robbers?

HEADQUARTERS OF ALLEN'S APIARY AT ALBUQUERQUE, NEW MEXICO.

REPORTS AND EXPERIENCES

Transporting Bees Long Distances

I write this to inform you of a transportation of bees on a long voyage which migh be interesting and useful to fellow beekeepers. Last year, in October, I had a friend going to your country, and I asked him if he would care to bring me a colony of Italian bees from the United States when he returned to China in the spring.

He did so, and left San Francisco on Feb. 3d last. It took over 30 days to reach me here in Tientsin. The colony was hived in a 10-frame dovetailed hive, with an extra number of 8-frames full of honey, a super on top filled with 28 empty 4¼-inch square sections, an "eke" under the brood-chamber, bottom-board and cover; a wire-cloth under the cover for ventilation, and another long strip on the entrance.

On opening the hive, to my dismay, I found all the combs were smashed and broken from the frames, and there were no live bees in the brood-chamber, only about a handful of dead ones crushed on the combs and bottom-board. All the live bees, by no means a big number, had cleverly clustered in two empty sections above. I at once drove them down into a new clean brood-chamber with combs and stores. I then left them alone, as the days were still cold about 40 degrees Fahr. at noon, but I was very anxious about the queen.

After a week, as the weather turned warmer, I looked carefully into the brood-chamber and found Her Majesty. You can imagine I was glad beyond expectation I think I am very fortunate in this case, because my friend knows nothing about bees. That is why the combs were smashed on the voyage. He told me that he put the colony in the coldest place on the deck of the steamer he traveled by from San Francisco to Tientsin, and while the vessel was in mid-Pacific Ocean, quite a number of the bees found a hole and flew out. He thought they returned to the hive, but I am afraid they were lost. He afterwards stopped up the hole. Though the combs had been badly smashed, it was quite a miracle that the queen and bees were able to seek safety in the empty sections above for so long a time; but you must remember it was winter, and the bees were not active.

I must thank the San Francisco beekeeper who gave my friend the colony with a super of empty sections. Had there been no empty sections on top, I am afraid the bees would have been all killed. K. H. CHUN.

Tientsin, China, March 24.

[To transport bees long distances, it is best to fasten each comb beforehand, by nailing cleats or fastening wires on both sides of each comb. Besides, it is well not to ship new swarms that have very white and fragile combs. Colonies with combs 4 or 5 years old are much safer. Of course, if proper handling was secured, and the hives were not laid upon their side, placing the combs in a horizontal position, there would be very little danger. Your experience may be of use to others in similar circumstances.—EDITOR.]

Prospects are Good

The prospects are good for honey.

Fraser, Idaho, June 10. F. F. GEORGE.

No Comb Honey Yet

It looks like the honey crop with me this season will be a failure. As yet I have no comb honey and only 7 gallons of extracted from 30 colonies. Bees wintered on short stores. J. C. GAKLEN.

Memphis, Tenn., June 1.

Storing Some Surplus

We had it real dry here all spring, but got a fine rain last night and this morning, 1.3 inches.

Bees are in fine condition, and are storing some surplus honey. H. W. HECHLER.

Hedrick, Iowa, June 3.

Bees Wintered Well in Denmark

Here in Denmark bees have wintered well. At this time bees are working on berry and fruit blossom and breeding up very fast. Prospect is for a good year if we don't get too much cold weather.

JAMES CLAUSEN.

Tobjery, Denmark, May 24.

A Fair Crop Expected

Bees have not begun to store here as yet. Clover looks fair, but it hasn't as good a stand of old plants as at this time a year ago.

Basswood carries a fair crop of buds, so we *hope* for a fair crop between the two.

Dunlap, Iowa, June 9. E. S. MILES.

Bee Business Very Discouraging

The bee business is very discouraging. In March things looked very favorable for a good year, but April and May have been cold rainy months. Bees are in a weak condition. The way things look now it will take the season for them to strengthen up—too late for a crop of honey. The great drawback to this country is too much rain. White clover is beginning to show up in good shape, and things may take a turn for the better. M. S. SNOW.

Littell, Wash., May 30.

Prospects for Another Good Crop

Prospects here are good for another good honey crop, and I felt like "blowing" over my last year's crop (120 pounds per colony, spring count; one-half comb honey) until I read Dr. Miller's report.

I wintered 40 colonies in 2-story hives, and the rest with "deep shallow" extracting supers of honey. With a long hard winter this ensures plenty of stores and good wintering, but this time the winter was mild, and in May I found nearly all honey bound, and about 600 solid slabs of granulated honey, which, with plenty of honey coming in they would not touch except by exposing it in the open, and such an uproar! I gave foundation in place of these combs, and got them cleaned out for extracting, but in doing so I educated a lot of robbers and had 4 weak colonies robbed out.

LOUIS MACEY.

North Platte, Neb., May 27.

Ground Covered With Clover Blossoms

The ground here is covered with clover blossoms, and while the flow may not be prolonged as it was last season, the prospects are fine for a big crop. Bees were never in better condition, no losses being reported in this vicinity. First swarm seen and captured May 24.

I have stiffened prices on honey here, and shall get for extracted $7.50 for 60-pound can, and 45 cents for 3-pound can. Bulk, 15 cents flat, but shall not try to produce any section honey.

Letters received from different parts of the State report the prospects for a crop are not as good as here. A. F. BONNEY.

Buck Grove Iowa, June 2.

Gathering Honey from Red Clover

Seeing red-clover bees mentioned lately in the bee journals, and boomed pretty highly, I cannot help mentioning some of the facts that have come under my observation. Last fall my bees worked on red clover strong enough to have gathered 100 pounds per colony. But I can truthfully say that they did not gather a single ounce of honey. I held a post-mortem examination on many bees in the field, and could not find a single one that had enough honey to last it until it got home. They were working for pollen, and I will say that pollen is all they ever gathered from red clover. I will investigate in the field the coming season and see if I am not right. You know pollen is as important as honey to the bees, so that is why they work on red clover, also on corn and strawberries. CLYDE CORDREY.

Bellefontaine, Ohio.

[Please remember, however, that honey plants often act very differently in different localities, and even in the same locality in different years. The fact that your bees have never gathered honey from red clover does not prove that other bees might not succeed where yours have failed, nor that yours might not succeed in different localities. Cases have been reported that can hardly be disputed in which goodly quantities of honey have been stored from red clover.—C. C. MILLER.]

Honey Crop Looks Disappointing—No Show for White Clover

I had no winter losses, but the outlook for a honey crop looks disappointing for this season. We have had no apple blossoms, and there is no show for white clover. We had cherry and plum blossoms, but the bees worked on them only a few days as the weather was disagreeably cold. My Italian bees have very little honey and brood at present, but my Carniolans have lots of brood hatched, and are in fine condition. I opened a 10-frame hive of Carniolans today, and found brood in every frame, and a fair amount of unsealed honey, which I did not find in my Italians, and I have a fine stock of Italians. EDW. V. MAREK.

Peoria, Ill., May 16.

Sure of Some Honey

For some years I have only kept a few colonies on account of other business. I have fought hard to keep them through the epidemic of foul brood, which has been present in Jefferson and adjoining counties. Last spring we had some inspection done here, and I find conditions much better as far as I have been over the territory covered last year.

Bees are storing very fast. Some of my bees have one super full already. I produce comb and extracted honey; sometimes chunk honey.

The prospects are good for a fair crop of honey. We are sure of some, and with a 2½-inch rain today we look for the flow to continue for sometime yet.

I hope to meet as many as can possibly make it convenient to attend our meeting to be held at Mt. Pleasant July 28.

L. W. ELMORE, *Deputy Inspector.*

Fairfield, Iowa, June 12.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

BEES AND QUEENS from my New Jersey apiary.
J. H. M. Cook,
1Atf 70 Cortland St., New York City.

GOLDEN all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
2Atf Robert Inghram, Sycamore, Pa.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

PURE TUNISIAN QUEENS, tested, $1.00; 2-lb. bees with tested queen, $4.00. Safe arrival guaranteed. Lenoel, Nabeul, Tunis.

UNTESTED Queens, 75c each; $7.50 per doz. Nuclei, $1.25 per frame. Bees, $1.50 per pound. Full colonies, 8-frame, $6.50; 10-frame, $7.50.
Stover Apiaries, Mayhew, Miss.

BRITISH GOLDEN QUEENS, Carniolans, leather-colored Italians, tested, $1.50 each. Diseases unknown. William Beck,
Scosthrop Apiary, Bell Busk, via Leeds, Eng.

FOR SALE—Fine Italian Queens. See my large ad. in this issue.
J. F. Archdekin, Rt. 7, St. Joseph, Mo.

1914 QUEENS—Moore's strain of leather-colored Italians In April at 75c. Bees by the pound and Tested queens. Write us for prices on nuclei. Address,
Ogden Bee & Honey Co., Ogden, Utah.

ITALIAN QUEENS—Bees by lb. Descriptive List free. Apiaries under State inspection. Leaflets, "How to Introduce Queens," 15c. "How to Increase," 15c; both, 25c. 2A1t
E. E. Mott, Glenwood, Mich.

CHOICE ITALIAN QUEENS—Hardy, gentle, white cappers, 3-banded, hustlers. Untested 75c each; six for $4.00. Select untested, $1.00; six for $5.00. Tested, $1.50.
A. J Seavey, Farmington, Maine.

CHOICE ITALIAN VIRGINS—Three for $1.00; warranted, 75c each; tested, $1.25. Breeding queens, $2.00 and $5.00 each, by return mail.
Stanley & Finch,
1451 Ogden Ave., Chicago, Ill.

THREE-BANDED Italian Queens. Prices, untested, 75c each, or $7.50 per doz. Tested, $1.50 each, or $14 per doz. Safe arrival guarteed. James T. Johnson,
R. F. D., Route 1, Percy, Ill.

QUEENS—10 percent discount for orders received before May 1, to be filled in May and June. Tested, $1.00; untested, 75c. Dead ones replaced free. 2A9t
S. Click, Rt. 2, Box 16, Mt. Jackson, Va.

WE WILL be in the field with good Italian Queens in June for $1.00 each; 6 for $5.00. Two-frame nuclei in June without queen, $2.50; with queen, $1.00 extra.
D. J Blocher, Pearl City, Ill.

READY after April 20. Good Italian Queens. Tested, $1.00; untested, 75c. Satisfaction guaranteed. G. W. Moon,
1904 Adams St., Little Rock, Ark.

California Italian Queens and bees by the pound for June and later delivery. Booked full until June 1st. Circular and price-list free. Write.
J. E. Wing, 155 Schiele Ave., San Jose, Calif.

Northern-reared Queens of Moore's strain of leather-colored three-banded Italians. After June 15, untested, $1.00; 6 for $5.00; 12 for $9.00.
Ramer & Gluen, Harmony, Minn.

Phelps' Golden Italian Bees are hustlers.

Italian Queens, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or $7.25 per dozen. Safe arrival guaranteed.
W. W. Talley, Queen Breeder,
3Atf Rt. 4, Greenville, Ala.

Queens, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

Try Murry's strain of 3 banded Italians. No better queens at any price. Best stock obtainable. No foulbrood or other disease. Latest up-to-date methods in queen-rearing. Tested, 1 for $1.00, 6 for $5 00. Untested, 1 for 70 cts , 6 for $4 00.
H. D. Murry, Queen-Breeder, Mathis, Tex.

Three-Banded and Golden Italian queens. Ready March 1. They have been bred for three points, prolificness, gentleness and honey-gathering qualities. Prices, Select Untested, 75c each; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60. Tested, $1.50; Select Tested, $2.00.
Garden City Apiary Co.,
R. R. 3, Box 86, San Jose, Calif.

Pure Golden Queens, the best that twelve years can produce. Untested, $1.50 each. Select tested, $3.00 each. Breeders, $5.00 to $50. Send for booklet on "Bees and Diseases." Geo. M. Steele,
30 South 40th St., Philadelphia, Penna.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

The Bankston Bees and Queens are as good as the best. Golden, Three-band and Carniolan. Tested, $1.00 each; untested, 75c. Queens ready to ship April 15. Bees, per pound, $1.50. Nuclei, per frame, $1.50. Write us for prices on large lots of queens. Try us and be pleased.
Bankston & Lyon, Box 141, Buffalo, Tex.

Golden and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $2.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1 50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

Dunn's Golden Italian queens, bred strictly for business that produce a strong race of honey gatherers. March 1 to Oct. 15. One, mated, 75c; 6, $4.25; 12, $8.25; 50, $32. 50; 100, $60. L. J. Dunn, Queen Breeder,
2A9t Box 337 G. R. R. 6, San Jose, Calif.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3 00; Breeders, $5.00 and $10 C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

Quirin's Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G. Quirin,
The Queen Breeder, Bellevue, Ohio.

Queens Bred from Doolittle's best stock. Untested, 60c each; $6.60 per doz; $50 per 100. Same stock of one-year old queens removed from our colonies to prevent swarming, 50c each; $5.40 per doz; $40 per 100. Delivery guaranteed. Nuclei 2-frame, $1.50; 3-frame, $2 00. Add price of above queens wanted. We have a rare bargain of apiary of several hundred colonies of bees for sale on easy terms. Particulars on request.
Spencer Apiaries Co., Nordhoff, Calif.

For Sale.—Three-banded Italian Queens, bred from the best honey-gathering strains, that are also hardy and gentle. Untested queens, 75c; six, $4 25; 12, $8.00. Tested, $1.25; 6, $7.00; 12, $12. For select queens, add 25c each to above prices Breeding queens, $3.00 to $5 00 each. For queens in larger quantities write for prices. Robt. B Spicer,
Wharton, N. J.

Famous North Carolina Bred Italian Queens for sale (red clover 3-banders). Honey-gatherers good as the best. Strictly reared from Geo. B. Howe's best breeders; mated with Root's, Moore's, Davis' Select Drones; bees that get the honey. Free from disease. Untested, one, 75c; per doz., $7.50. Select untested, one, $1.00; per doz., $9.00. Tested, one, $1.25. Select tested, $1.50. Extra select tested, $2.00. Breeders, $3 00 and $5.00. H. B. Murray, Liberty, N. C.

Queens by return mail or your money back. Guaranteed purely mated. J. E. Hand strain of 3 banded Italians Bred for gentleness, honey gathering and wintering. State inspector's certificate. Select untested, one, 75c; six, $4.00; 12, $7.00. Tested, one, $1 00; six, $5.00; 12, $9.00; Select tested, one, $1.25; six, $7.00; 12, $13 Breeders, $4.00 each. Write for price on large orders. Safe delivery and satisfaction guaranteed in U. S. and Canada. Ten percent discount on 30 days' advance orders. Reference, First National Bank. J. M. Ginerich, Arthur, Ill.

Three-Banded Italian Queens. Before July 1st, untested, one, $1.00; 6, $5.00; 12, $9.00. Select untested, one, $1.25; 6, $6.25; 12, $11.

After July 1st, untested, one, 75c; 6, $4.00; 12, $7.00. Select untested, one, $1.00; 6, $5.00, 12, $8.50 One-frame nuclei, 75c; 2-frame, $1 50; 3-frame, $2.25. To each nucleus add price of Queen. Our Queens are reared in a locality where there has never been disease, and reared from strong vigorous colonies. The apiary is under most competent supervision. Safe arrival and satisfaction guaranteed.
Horner Queen & Bee Co., Ltd.,
Youngsville, Pa.

HONEY AND BEESWAX

"Null's Famous Melilotus Honey.' Sample for stamp. Null Co., Demopolis, Ala

---

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale—Orange honey in 60-lb. cans, 2 in a case, at 9c per pound. Sample free.
James McKee, Riverside, Calif

SUPPLIES.

Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

Better Hives for Less Money—Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

The A. I. Root Company's Canadian House. Dadant's Foundation. Poultry, Supplies, Seeds. Write for catalog.
The Chas. E. Hopper Co.,
185 Wright Ave., Toronto, Ont.

The National Beekeepers' Association now buy supplies for their members. Send us your order, enclosing the same money you have to pay others, and we will buy them for you on the co-operative plan. If not a member we reserve the right to retain $1.50 from the profits on your first order to pay your membership dues and subscription to the Review one year. Sample copy of the Review free. Address,
National Beekeepers' Ass'n., Northstar, Mich

MISCELLANEOUS

Original and unique honey advertising post cards (photos). Write Dr. Bonney, Buck Grove, Iowa, for samples.

Wanted to Exchange—8 and 10 frame Dovetailed hives in flat, Dadant uncapping cans, and other supplies; all new goods. Want honey. Stanley Ingalls,
Lenox, Iowa.

The Beekeepers' Review Clubbing List The Review and American Bee Journal one year $1.50. The Review and Gleanings one year, $1.50. All three for one year only $2.00. Dealers, or those wanting to buy honey, kindly ask for a late number of the Review having a list of 100 producers having honey for sale. Address,
The Beekeepers' Review, Northstar, Mich.

I Got 100 pounds of comb honey per colony; my neighbors got none. I'll tell you how for 25c. O. N. Baldwin, Baxter, Kan.

Make paint without oil cheaply. Best known for bee-hives, barns, coops, etc. Formula, 15c. I. Holmberg,
El Dorado Springs, Mo.

SITUATIONS.

Wanted Immediately—A good willing assistant helper as apprentice for balance of season I will do well by one who is really anxious to learn, and is a good worker. Bees located in Missaukee Co , Mich., in a great clover belt. If interested, address letter to O. H Townsend, Butterfield, Missaukee Co., Mich., giving age, etc.

POULTRY

For Sale—Single Comb Buff Orpington eggs for hatching, pure bloods; $1 00 per 15 or $5 00 per hundred. Satisfaction Guaranteed.
W. H. Payne, Hamilton, Ill.

EASTERN
BEEKEEPERS

This is the season when you will need bees or supplies. Our catalog, which is free, will show you how to save money. We have a large stock and can ship promptly.

Italian queens, $1.10.

I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

ITALIAN QUEENS NORTHERN BRED

Superior winterers, second to none. My free list explains it all. Untested, $1.00; select tested, $1.50. Bees by the pound or half pound. Plans, "How to Introduce Queens," 15 cents, "How to Increase," 15 cents; both, 25 cents.

E. E. MOTT, Glenwood, Mich.

ARCHDEKIN'S FINE ITALIAN QUEENS

Three-banded. Bred for persistent profitable production of honey. Prolific, hardy, gentle. The bee for pleasure or profit. One customer says, "Your queen soon had her 10 frames running over with bees that are hustlers. No disease. Satisfaction guaranteed. Orders filled promptly. Ready May 20.

Untested, $1.00 each; 6 for 5.50; doz., $10.
Select tested, $2 each.

J. F. Archdekin, R. R. 7, St. Joseph, Mo.

HONEY AND BEESWAX

CHICAGO, June 20.—There is very little honey sold at this time of the year in this market; therefore, prices vary but little. During July it will be coming forward, but at this writing none of that gathered in 1914 has come, as there has been an abundance of the crop of 1913 to supply all demands. Fancy comb is held at 14@15c per pound with under grades ranging from 1@3c per pound less. Extracted 8@9c per pound for white, and 7@8c per pound for light ambers. Beeswax 33@35c per pound, according to color and cleanliness. R. A. BURNETT & CO.

SAN FRANCISCO, June 20.—Comb honey is 13@14c per pound for fancy; 11@12c for light amber; 10c for amber Extracted honey, white, 8@10c; light amber, 6@8c; dark, 5@5½c. Some of the new extracted honey has come in, in small quantities, the cold weather having interfered with the prospects of early honey, and some of the beekeepers are complaining. JOHN C. FROHLIGER.

KANSAS CITY, MO., June 15.—Our market is still bare of comb honey, except what is left in retailers' hands. There is plenty of extracted honey, but the weather is so warm there has been very little demand. We think new honey will sell about as follows. No. 1 white comb, 24-section cases, $3 25 to $3 50; No. 2, $2 75 to $3 00; No. 1 amber, $3 25; No. 2, $2.75 to $3 00 No. 1 extracted, white, per pound, 7½@8c; amber, 7@7½c. No. 1 beeswax, per pound, 30c; No. 2, 25c.
C. C. CLEMONS PRODUCE COMPANY.

BOSTON, June 18.—Fancy and No. 1 white comb, 15@16c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c. BLAKE,-LEE COMPANY.

CINCINNATI, June 17.—It is an effort to make honey sales, and the stock of all grades are heavy for this time of the year. Prices are easier than they were. We note many dealers slashing prices to unload. We are selling fancy comb honey at $3.65 to $3 75 per case wholesale. Extracted amber honey from 5½@6½c a pound. White extracted from 7½@10c a pound, according to quantity and quality purchased. We want beeswax at 32c a pound delivered here.
THE FRED W. MUTH CO.

INDIANAPOLIS, June 15.—Fancy white comb honey is being offered here at 16@17c per pound; amber comb at 14@15c. White clover extracted 9@10c in 5-gallon cans. Much comb is being held here, but at this writing there is very little demand. Extracted is in fair demand. Producers are being paid 32c cash for beeswax or 34c in trade. WALTER S POUDER.

LOS ANGELES, June 20.—I beg to advise you that quotations on honey at present are as follows: Light amber alfalfa, 5½c; light amber sage, 6c; fancy white sage and white orange, 7@8c. Beeswax is in very light supply, and is quoted at 32c.
HAMILTON & MENDRRSON.

DENVER, June 15.—We have no more old stock of comb honey to offer. We are selling extracted in a jobbing way at the following prices: White extracted, 8c; light amber, 7c. We pay 32c per pound in cash and 34c in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

NEW YORK, June 17.—There is some demand for new crop of white comb honey which is selling at from 14@16c per pound, according to quality. Off grades are not wanted. We carried over several lots from last year for which it seems almost impossible to find buyers at any reasonable price. As to extracted the market is decidedly dull. The new crop is beginning to arrive from the South, and off grades find a slow sale at from 55@60c per gallon, while fancy grades are in better demand, and are selling at around 75@85c per gallon, according to quality. West India honey, especially Porto Rican, is arriving right along and finds only small sale at 55@57c per gallon. Beeswax is steady and firm at from 34@36c per pound, according to quality.
HILDRETH & SEGELKEN.

SHIPPING CASES - SPECIAL DEAL

SINGLE DECK—24 section. 2-inch glass shipping cases, special price. Write us!

Ship us your old combs and cappings. It means more wax and money for you.

We buy honey for cash. Write us what you have to sell.

THE FRED W. MUTH CO.,
"The Busy Bee Men"
204 Walnut St., Cincinnati, Ohio

Miller's Strain Italian Queens

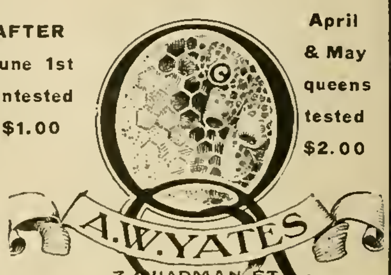
By **return** mail or money refunded. Bred from best **RED CLOVER STRAINS** in the United States. In full colonies, from my **SUPERIOR BREEDERS,** northern bred; for business; long tongued; leather color or three-banded; gentle; winter well; hustlers; not inclined to swarm; roll honey in. Untested, 1, 75c; 6, $4.00; 12, $7.50. Select untested, one, $1.00; 6, $5 00; 12, $9 00. A specialist of 17 years' experience. Safe arrival and satisfaction guaranteed.

I. F. MILLER, - BROOKVILLE, PA.

"NUTMEG" ITALIAN QUEENS
By return mail.

AFTER June 1st untested $1.00

April & May queens tested $2.00



A. W. YATES
3 CHAPMAN ST
HARTFORD, CONN.
Write for prices by the hundred.

PONTIAC ENGRAVING CO.
ARTISTS
ENGRAVERS-ELECTROTYPERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

Untested Italian Queen-Bees

Our Standard Bred

6 Queens for $6.00
3 for $3.50
1 for $1.25

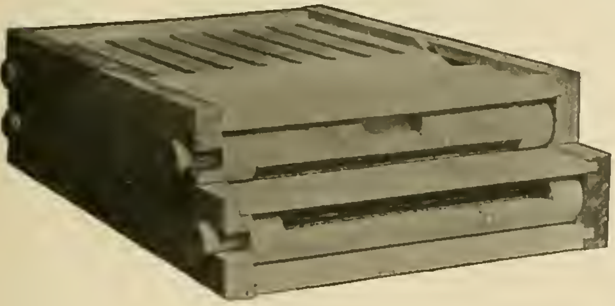
For a number of years we have been sending out to beekeepers exceptionally fine Untested Italian Queens purely mated, and all right in every respect.

The price of one of our Untested Queens alone is $1.25, or with the "old reliable" American Bee Journal for one year, both for $1.60. You cannot do better than to get one or more of our fine Standard-bred Queens.

AMERICAN BEE JOURNAL
Hamilton, Illinois

FEATURES OF ADVANTAGE OF THE

ROLLER ENTRANCE BOTTOM BOARD



1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.
2. It controls the mating of the queen so that mismating is prevented.
3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position
4. It sifts automatically undesirable drones out of the hive, and cages them in the drone trap.
5. It permits ample ventilation at the height of the honey-flow.
6. It can be instantly closed when moving bees in and out of cellars or from one yard to another.
7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.
8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.
9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.
10. It is adjustable to make a shallow bottom for summer and a deep one for winter

It contains many other valuable features which will be apparent to any beekeeper upon investigation, and if it is once tried it will always be used.

8-frame size, $2.00; 10-frame size, $2.50. Italian Queens, Breeders, $10 to $25.

Nothing sold under $10.

CHAS. G. SCHAMU

INVENTOR AND MANUFACTURER Box 48, **LIVERPOOL, NEW YORK**

TENNESSEE-BRED QUEENS

42 years' experience in queen-rearing—Breed 3-band Italians only

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested.........	$1.50	$ 7.50	$13.50	$1.25	$ 6.50	$11.50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select Untested	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested............	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested....	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Capacity of yard 5000 queens a year—Select Queen tested for breeding, $5

The very best Queen tested for breeding, $10. 300 fall reared tested Queens ready to mail, $2.50 to $10 each.

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed.

John M. Davis, Spring Hill, Tenn.

"Griggs Saves You Freight" **TOLEDO** "Griggs Saves You Freight"

With four carloads of new goods on hand, we are now better prepard for the rush than ever. But don't wait to be in the **rush.** Send your order in now and have the goods on hand, ready for use.

NEW ILLUSTRATED CATALOG OF 60 PAGES

We want one in every beekeepers' hands. Send postal for one today. It is free.

WHITE CLOVER EXTRACTED HONEY WANTED—ALSO BEESWAX

In exchange for supplies. It will be to your interest to get in touch and keep in touch with us.

S. J. GRIGGS & CO., 24 N. Erie St., TOLEDO, OHIO

GRIGGS IS ALWAYS ON THE JOB.

NEW ENGLAND BEE KEEPERS

Everything in Supplies
New Goods. Factory Prices
Save Freight and Express Charges
CULL & WILLIAMS CO.
Providence, R. I.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

Prices: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

Bee-Supplies

LET US FIGURE WITH YOU

We know we can satisfy you on quality. Write for catalog.

C. C. CLEMONS BEE-SUPPLY CO.
Dept. S., Kansas City, Mo.

CARNIOLAN QUEENS

AFTER JULY 1

	1	6	12
Untested..............	$1.00	$5.50	$9.00

Tested, the same price.

Address, **WM. KERNAN,**
R. F. D. No. 2, - Dushore, Pa.

TAYLOR'S 1914 THREE-BANDED

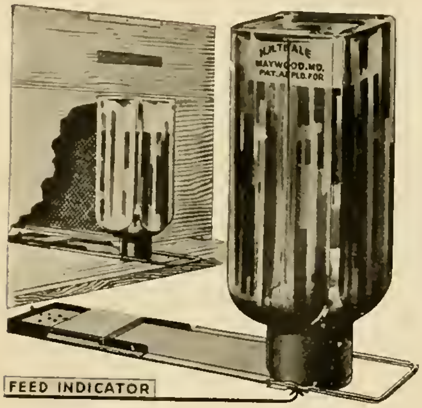
Italian Queens

Now ready by mail; 26 years' careful breeding for the best honey-gatherers. None better. Prolific, and honey-getters. We fill all orders promptly. Untested, $1.00 each, or $10 a dozen. Tested, $1.25 each, or $12 a dozen. Select tested, $1.50 each, or $15 a dozen. Breeders, the best, $5.00. Send all orders to

J. W. Taylor & Son, Beeville, Bee Co., Tex.

QUICK SHIPMENT OF QUEENS

of 3-band stock reared for honey-gathering qualities **Untested, June, $1.00. Later, 75c Tested, $1.50. Select tested, $2.** Send your orders now and be assured of having queens when you want them. **R. A. SHULTS, Cosby, Tenn.**



Thale's Regulative Vacuum Bee-Feeder

Is the best by test. Arrangements have been made with the leading dealers and Bee Supply manufacturers to catalog and sell this feeder for 1915.

WATERTOWN, WIS., May 7, 1914.

MR. H. H. THALE, Maywood, Mo.—*Dear Sir:*—Referring to your Bee Feeder and the test Mr. Kenneth Hawkins made for us, we are herewith enclosing copy of his report just received, and which will undoubtedly be of interest to you. We have now made note to list this feeder in our 1915 Bee Supply catalog and will place our orders for feeders in due time. Yours truly, GEO. B. LEWIS COMPANY.

PLAINFIELD, ILL., May 4, 1914.

G. B. LEWIS CO., Watertown, Wis.—*Dear Sirs:*—In referring to comparative tests of bee feeders, in my opinion there is no better feeder for stimulative feeding or for the queen breeder than Thale's Regulative Vacuum Bee Feeder. It is better than the Boardman in that the bees can always take the syrup, even in coldest weather. They took feed here with the temperature at 22 degrees at night. There is no comparison between the Thale and Boardman or division-board feeder, owing to the ease with which one may control the flow. It is better than the Alexander for the same reason, and that it doesn't make a nuisance fastened to the hive. The Miller feeder will always be the best fall feeder for handling large lots of syrup, I believe, but the Thale may be fed so as to empty in 12 hours, I have found, and that threatens to outgrow the Miller, owing to the ease of operation and lack of bothersome equipment. The value of stimulative feeding is already known, and within 24 hours after feeding with the Thale I had eggs in every cell that the bees could cover here with the temperature below freezing. This with pollen from the maples. Altogether I recommend the Thale feeder as being the best feeder I have ever used for stimulative feeding. KENNITH HAWKINS, *Breeder of Quality Hill Queens.*

Beekeepers can buy these feeders from G. B. Lewis Co., Watertown, Wis., and their thirty distributing houses: Minnesota Bee Supply Co., Minneapolis, Minn.; Leahy Mfg. Co., Higginsville, Mo.' Earl M. Nichols, Lyonsville, Mass.; B. H. Masters, Edison, Ohio; and Harry W. Martin, New Holland' Pa. I want every dealer and manufacturer of Bee Supplies to handle these feeders next season. Write for jobbers' prices. Buy these feeders from your nearest dealer for 1915.

H. H. THALE, Manufacturer, Maywood, Mo.

SYRACUSE CHICAGO NEW YORK BALTIMORE CANONSBURG

CONTINENTAL CAN COMPANY

INCORPORATED

HONEY CANS

All Styles—All Sizes

Friction Top

Boxed Square Cans

60-Pound Shipping Cans

HONEY PAILS

Sales Offices:
2201 South Halsted St., Chicago
616 W. 43d Street, New York City

MARSHFIELD GOODS

BEE KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

PAGE - KENKEL MFG. CO.

Manufacturers
OF THE
"NONE BETTER"
BEE-KEEPERS' SUPPLIES

Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping - Cases, Brood-Frames, Separators, etc.
We invite your correspondence.

Guarantee — All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

Page-Kenkel Manufacturing Co.,
New London, Wis.

Beekeepers' Supplies and Fruit Packages

We manufacture the famous Sheboygan Hive, which always gives absolute satisfaction. Our perfect sections, made from selected white basswood, are recognized as the best on the market.
Catalog now ready for distribution. Write for copy.

SHEBOYGAN FRUIT BOX COMPANY, Sheboygan, Wisconsin

FOR THE BEST Early QUEENS

Send me your address for Italians and Carniolans. I BEGIN mailing Queens early in March. Untested, 75 cts. each. Tested, $1.25 each. Circular free.

Grant Anderson, San Benito, Texas

Dittmer's Foundation

Is the **Comb Foundation** made to **suit the Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

Ask for more information; also prices and **FULL DISCOUNT** on all Bee-Supplies.

Gus Dittmer Company
Augusta, Wisconsin

PHARR WANTS YOUR ORDERS FOR QUEENS

Goldens and 3-Banded Italians

For twelve years we have asked for your orders and we have gotten all we could fill and sometimes more. But we have ever tried to serve you right, and will guarantee similar treatment in the future. Prices of Untested, $1.00; Tested, $1.50; Breeders, 3.00 to $5.00. Write for prices in large quantities.

2-frame Nuclei, queenless, $2.25
3 " " " 3.25
10 " colonies with queen 8.00
All F. O. B. Berclair.

Orders booked now—delivery last of May or June

John W. Pharr, Berclair, Texas

CARNIOLAN QUEENS

Carniolans are excellent winterers, build up rapidly in the spring, are very gentle, very prolific, cap their combs very white, enter supers readily, and keep their colonies strong at all times. Write for our **free** paper, "Superiority of the Carniolan Bee," explaining more fully, giving briefly best systems of management. Untested queens, $1.00 each; doz., $0.00. One-lb. package bees without queen, $1.50; with queen, $2.50, in June.

ALBERT G. HANN, Clinton, New Jersey
Carniolan Queen-Breeder.

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-Page Catalog

Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

C. H. W. WEBER & CO.

CINCINNATI, 2146 Central Avenue, OHIO

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

WE MAKE IT GOOD

THE BEES MAKE IT FAMOUS

The Reputation of

DADANT'S FOUNDATION

Has been built on its merit

It is a Favorite with Beekeepers

BECAUSE

It is so well liked by the BEES

Whether it's a pound or whether it's a ton, every sheet is PERFECT

Satisfaction Guaranteed in Every Way

DADANT'S FOUNDATION

DADANT & SONS,

HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL
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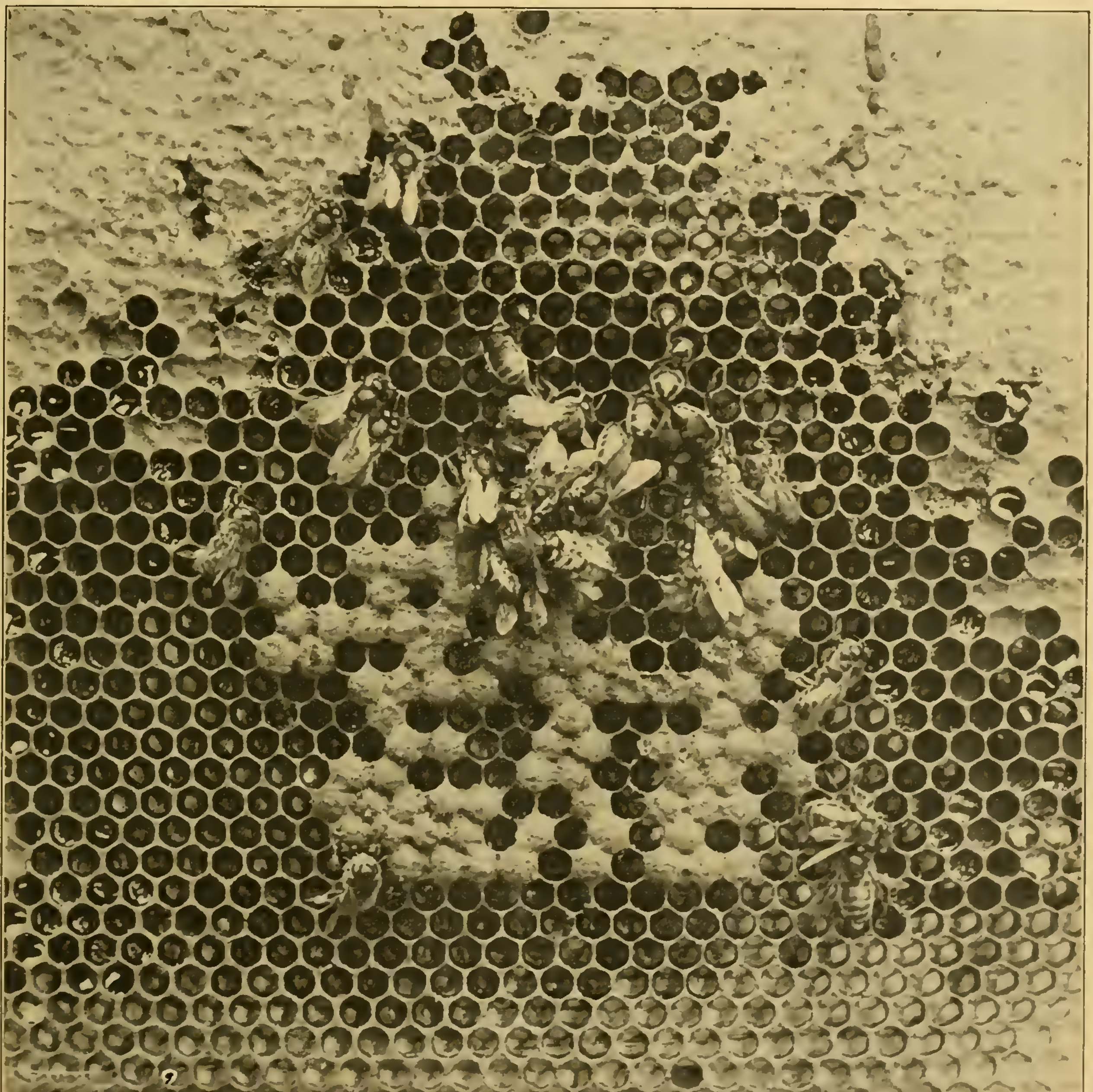

Isle of Wight Bee Disease

Showing queen among small cluster of dead bees on comb, taken from center of brood-nest in early spring.

See contribution by G. W. Judge. COPYRIGHT.

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec14" on your label shows that it is paid to the end of December, 1914.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 5 lines accepted.

DISCOUNTS:

3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 23d of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1805. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD

Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913

Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.
STILLWATER, Oct 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.

(Signed) PROF. E. C. SANBORN,
State Entomologist.

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens. Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n
ANTHONY BIAGGI,
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

Buy Carniolans in Carniola

Pure Carniolan Alpine Bees
Write in English for Booklet and pricelist. Awarded 60 Honors

Johann Strgar, Wittnach
P. O. Wocheiner-Feistritz
Upper - Carniola (Krain), Austria.

"If goods are wanted quick, send to Pouder."

BEE-SUPPLIES

EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections. No shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POUDER, 873 Massachusetts Ave., Indianapolis, Ind.

Free BEE BOOK

For Beginners or Old-timers

Lots of good tips on raising those wonderful little money makers in this book—describes our complete line of bee supplies.

Bees Help Pay the Grocery Bill

Little expense, fascinating pastime. Act on good impulse, start right now.

Blanke Mfg. & Supply Co.,
Dept. 1, St. Louis, Missouri

LARGEST, BEST

and most complete line of Bee and Poultry Supplies ever seen in Illinois at the lowest living prices. Satisfaction guaranteed or money refunded. Established in 1899. Send for our new catalog. Let us hear from you.

H. S. DUBY & SON, St. Anne, Ill.

QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate. Purest of the pure

GREY CAUCASIANS

Bred strictly in the light of **Mendel's Laws of Heredity**; no guess, but positive results. The pioneer **scientific** queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special **isolated mating station** on bald open prairie, not a tree within miles—no chance for gypsy drones.

CHAS. W. QUINN
Box 389 - Beaumont, Texas

SHIPPING CASES

SPECIFICATIONS

One-piece cover, bottom and back, one-fourth inch thick and smooth on both sides.

Ends one-half inch thick, smooth on both sides and hand-holed.

Glass rails three-eighths inch thick, smooth on both sides.

Lumber free from rot, shake, and loose or rough knots.

Corrugated straw board in the bottom and paper covering on top. Where can you find a better case?

One-piece cover and bottom makes a much better and stronger case than a pieced cover or bottom.

Our shipping cases must be seen to be appreciated.

Why do you pay more money for an inferior article? Get our prices and save money.

MINNESOTA BEE SUPPLY CO. 100 Nicollet Island Minneapolis, Minn.

Manufacturers of Dovetail Hives, Sections, Hoffman Frames, Etc.

CEDAR WOOD
Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.
FROFALCON QUEENS
Everything for the beekeeper. Address.
J. C. Frohliger, Berkeley, Calif.
Greater San Francisco
Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery

Read what J. I. PARENT, of Charlton, N. Y., says "We cut with one of your Combined Machines, last winter 50 chaff hives with 7-in cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.
Address, W. F. & JOHN BARNES
995 Ruby St., Rockford, Ill.
Please mention Am. Bee Journal when writing.

Try My Famous Queens
From Improved Stock.
The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.
3-Band, Golden, 5-Band and Carniolan
Bred in Separate Yards
Untested, one, 75c; 6, $4.25; 12, $7 50; 25, 14 25; 100, $50. Tested, one, $1 50; six, $8.00; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.
D. E. BROTHERS, Attalla, Ala.

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(Trade mark.)

BEE-ESCAPE
SAVES {HONEY TIME MONEY} AT ALL DEALERS
Each, 15c; Doz., $1.65, postpaid
If your Dealer does not keep them, order from Factory, with complete instructions.
R. & E. C. PORTER, MFRS.,
Lewistown, Illinois

BEEKEEPERS' SUPPLIES
Such as Winter-cases, Sections, brood-frames of every description, Section holders, Comb Foundation, Supers, Hive-bodies, Smokers, etc.
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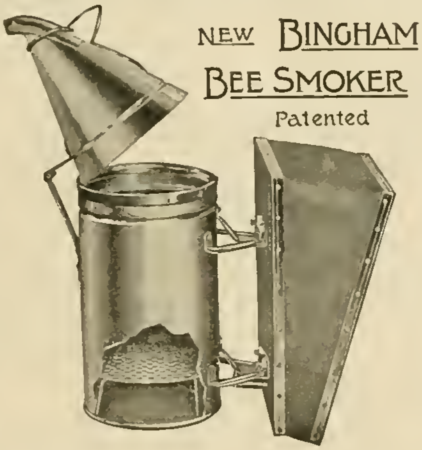

nearly forty years on the market, and the standard in this and many foreign countries. The all-important tool of the most important honey-producers of the world. Such men as Mr. France and the Dadants use the Bingham. By co operation Mr. Townsend uses six Smoke Engines' For sale at your dealers or direct. Postage extra.
Smoke Engine, 4 inch stove; wt. each 1¾ lb.......$1.25
Doctor, 3½-inch stove; wt. each 1⅝ lb... .85
Two larger sizes in copper, extra.... .50
Conqueror, 3-in. stove; wt. each, 1½ lb.. .75
Little Wonder, 2½-inch; wt. each 1 lb... .50
Two largest sizes with hinged cover.

Woodman Style Veils
Our veils contain 1½ yards of the best material for the purpose—imported French tulle veiling. They are made with a rubber cord in the top to fit around the hat, and the lower edge has the cord arrangement, the two ends going around behind the body, and back in front to tie. This arrangement holds the veil down on the shoulders snugly, away from the neck, and permits the wearer to handle bees in his shirt sleeves with no chance of bees crawling up and under veil. With a hat of fair size brim to carry veil away from the face, you are as secure from stings, movements as free and unrestricted, and as cool and comfortable as you would be at a summer resort.
All cotton, each, postpaid.......$ .50
Cotton with silk face, each, postpaid....... .60
Bee-hat, flexible rim, fits any head, postpaid....... .35
Extra silk face piece, postpaid....... .10
Long-sleeve bee-gloves, postpaid....... .35
Such men as R. F. Holtermann, J. E. Crane & Son, N. E. France, and many others all over U. S. A., order a supply of these veils each season, year after year.
A. G. Woodman Company, Grand Rapids, Mich.

We Make a Specialty of Manufacturing
SECTIONS
They are the Finest in the Land—None Better.
Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.
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Bees by the pound and full colonies
From a superior strain of three banded Italians. Hardy, gentle, and they are hustlers. Guaranteed to please you.
Send for my 1914 descriptive catalog
I have a large stock of modern Bee Supplies always on hand. Root's Goods at factory schedule of prices packed and delivered to my station. All orders will receive prompt and careful attention.
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Gray Caucasians
Best Bee for Everybody
Glass Honey Dishes
The Handiest Dish in the Home
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A Great Tool for the Bee Yard
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Guaranteed to Rid Everything of Ants
Prices sent free. Write to-day.
A. D. D. Wood
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QUEENS of MOORE'S STRAIN of ITALIANS
PRODUCE WORKERS
That fill the supers quick
With honey nice and thick.
They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.
Untested queens, $1.00; six, $5 00; 12, $9.00
Select untested, $1.25; six $6.00; 12, $11.00
Safe arrival and satisfaction guaranteed.
Circular free. J. P. MOORE,
Queen-breeder Route 1, Morgan, Ky

"Falcon" QUEENS

Three-band and Golden Italians, Caucasians and Carniolans

Untested, July 1st to Oct. 1st, one, $ .85; six, $4.50; twelve, $ 8.50
SELECT Untested, July 1st to Oct. 1st, one, 1.00; six, 5.50; twelve. 10.00
Tested, $1.50 each. Select tested, 2.00.

All queens are reared in strong and vigorous colonies, and mated from populous nuclei.
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Write for samples of our foundation and Red Catalog, postpaid.

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Prompt Service in Shipping. We sell at factory prices. Beeswax Wanted
Send for 1914 Catalog showing our Parcel Post Service.

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When You Need Queens

We will be pleased to fill your order. Our business of rearing queens was established in 1886. We know what it means to have a good strain of bees and queens that stands second to none. Three-band Italians only—bred for business and free from disease. Tested, $1.00 each. Untested, 75c; $7 00 a do

J. W. K. SHAW & CO., Loreauville, La.

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years. In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority.

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL — Breeding. — Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

HONEY AND BEESWAX

CHICAGO, July 20.—A little of the honey harvest of 1914 is on the market, but it is meeting with very little demand, and prices are not at all firm Sales are being made at from 14@15c per pound for the best grades of white comb honey in one-pound section frames with the ambers at from 1@3c per pound less. Extracted ranges from 7@9c per pound for the white grades, and from 6@8c for the amber, all according to flavor and other qualities. Beeswax continues to sell upon arrival at 35c per pound if of good color, free from sediment or adulteration of any kind. R. A. BURNETT & CO.

LOS ANGELES, July 20.—A large proportion of the crop in California has suffered seriously during the past year on account of disease among the bees. As a result there are fewer bees working this year, but the yield per colony is much better than it was last year in most districts. The orange crop was small this season, amounting to only about one-half of last year's production, and this kind of honey is practically all sold. The crop from sage and other mountain flowers has been of exceptionally fine quality, and the yield has been quite good, whereas last year white sage was practically a failure. Alfalfa honey seems to be quite plentiful, and is freely offered at 1c per pound less than the average price of last year. Market conditions have been very satisfactory so far this season, the demand being very poor, even though prices are much lower than during the previous season. Although wax has sold at unusually high prices throughout the spring, the market is considerably easier now. New wax is being received in small quantities, and will no doubt be plentiful before long. HAMILTON & MENDERSON.

CINCINNATI, July 2.—There is very little demand for honey of all grades, for the reason that business in general is below normal. In fact, it is very dull, and we find sales difficult to make. However, there are shipments of new honey headed this way, both comb and extracted honey, and perhaps its arrival will give the demand an impetus. Until the conditions are settled we refrain from quoting prices.
THE FRED W. MUTH CO.

BOSTON, July 17.—Fancy and No. 1 white comb, 15@16c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c. BLAKE,-LEE COMPANY.

INDIANAPOLIS, July 14.—Very little honey is moving Much comb has been carried over from last year. The demand is good for extracted, but as yet no prices are established. Producers of beeswax are being paid 32c cash, and slightly higher when goods are taken in payment.
WALTER S POUDER.

DENVER, July 15.—We have no more old stock of comb honey to offer. We are selling extracted in a jobbing way at the following prices: White extracted, 8c; light amber, 7c. We pay 32c per pound in cash and 34c in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

SAN FRANCISCO, July 20.—Comb honey is 13@14c per pound for fancy; 11@12c for light amber; 10c for amber. Extracted honey, white, 8@10c; light amber, 6@8c; dark, 5@5½c. Some of the new extracted honey has come in, in small quantities, the cold weather having interfered with the prospects of early honey, and some of the beekeepers are complaining. JOHN C. FROHLIGER.

KANSAS CITY, MO., July 15.—There is no change to note in our honey market. No new comb coming in, and our market is well supplied with extracted honey. Weather is still hot, consequently no demand to speak of for extracted. We think the first shipments of honey will sell as follows: No. 1 white comb, 24-section cases, $3.25 to $3.50; No. 2, $2.75 to $3.00; No. 1 amber, $3.00 to $3.25; No. 2, $2.75 to $3.00. No. 1 extracted, white honey, per pound, 7½@8c; amber, 7@7½c. No. 1 beeswax, per pound, 25@30c.
C. C. CLEMONS PRODUCE COMPANY.

NEW YORK, July 17.—There is practically nothing new to report. Some new crop comb honey is arriving from the South, and fancy stock is selling at 16c; lower grades, 12@14c, all according to quality. We still have a lot of last year's stock on hand, all off grades, more or less candied, for which there is absolutely no sale at any reasonable price.

As to extracted, the market is quiet, and no prices have been established as yet for the new crop, on California, Western or Eastern honey; in fact, there is none in the market as yet, excepting from the South, which finds fairly good sale at former quotations. Beeswax is more plentiful and in less demand. Prices ranging from 34@36 per pound. HILDRETH & SEGELKEN.

Notice, Secretaries!

We want the name and address of the Secretary of every beekeepers' association in the United States and Canada, also the dates on which the Convention or Field Day of the coming season will be held; also other detailed information in regard to the forthcoming convention.

THE AMERICAN BEE JOURNAL

Is at the service of Beekeepers' Organizations, and we cannot render full and complete service unless he have the necessary information from the associations. We trust every American Bee Journal reader whose eye catches this notice who is a member or a friend of a member of a beekeepers' organization, will make it a point to call the secretary's attention to this notice and advise him to forward us the necessary information.

AMERICAN BEE JOURNAL, HAMILTON, ILL.

Miller's Strain Italian Queens

By **return** mail or money refunded. Bred from best **RED CLOVER STRAINS** in the United States. In full colonies, from my **SUPERIOR BREEDERS,** northern bred; for business; long tongued; leather color or three-banded; gentle; winter well; hustlers; not inclined to swarm; roll honey in. Untested, 1, 75c; 6, $4.00; 12, $7.50. Select untested, one, $1.00; 6, $5.00; 12, $9.00. A specialist of 17 years' experience. Safe arrival and satisfaction guaranteed.

I. F. MILLER, - BROOKVILLE, PA.

"NUTMEG" ITALIAN QUEENS

By return mail.

AFTER June 1st untested $1.00

April & May queens tested $2.00

A. W. YATES
3 CHAPMAN ST
HARTFORD, CONN.

Write for prices by the hundred.

PONTIAC ENGRAVING CO.
ARTISTS
ENGRAVERS-ELECTROTYPERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

Untested Italian Queen-Bees

Our Standard Bred

6 Queens for $6.00
3 for $3.50
1 for $1.25

For a number of years we have been sending out to beekeepers exceptionally fine Untested Italian Queens purely mated, and all right in every respect.

The price of one of our Untested Queens alone is $1.25, or with the "old reliable" American Bee Journal for one year, both for $1.60. You cannot do better than to get one or more of our fine Standard-bred Queens.

AMERICAN BEE JOURNAL
Hamilton, Illinois

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OF YOUR HONEY CROP

Now that you are through with all the anxious work preliminary to gathering in the honey

Look to It that Your Honey Crop Goes On the Market Right!

See that Your Honey Is In

Lewis Sections

The sections that are scientifically right—made out of nice bright Wisconsin basswood
The manufacture of Lewis Sections is watched over by experts

Lewis Sections Fold Perfectly

Lewis Shipping Cases ARE SUPERB

Do not cheapen your product by inferior cases. You can afford the best
Remember, your shipping cases are the show windows for the sale of your goods
Your honey will bring more money if well displayed

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AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., AUGUST, 1914

Vol. LIV.—No. 8

EDITORIAL COMMENTS

Edition of Iowa Bulletins Exhausted

Mr. Frank C. Pellett, State Inspector of Iowa, states that the demand has been so great for Reports of the Bee Inspector of Iowa, that the supply will be exhausted within a short time. These Reports can no longer be sent out on requests outside of the State owing to the limited quantity.

Always Interesting

The "Guide to Nature" is always interesting, but its July number is unusually fine. Among curious photographs it contains one of a rooster in the act of crowing. The flash was taken at the proper moment.

Minnesota State Beekeepers

The "Minnesota Horticulturist" contains a report of the joint session of the Minnesota State Horticultural Society with the Garden Flower Society, the Beekeepers' Society and the Florists' Society on June 16, but it has only this to say of the beekeepers:

> "The beekeepers were out in considerable force, but they withdrew themselves at a respectable distance where they could talk bees and manipulate them without interfering with the comfort and happiness of the other members of the society. Nothing seems to be more absorbing than the study of the bee. as judging from the interest that that society takes in its work."

Honey Plants of Iowa

We have received the following letter from Dr. L. H. Pammel, the Botanist of the Iowa Agricultural Experiment Station. Dr. Pammel is a man of great ability, who is already the author of two large botanical works, "A Manual of Poisonous Plants of Eastern North America," and "The Weed Flora of Iowa," which was noticed in our April number, page 116.

We trust the beekeepers of Iowa and surrounding States will heed the request and lend their help to this able worker in producing a useful work for this section. The cooperation of the American Bee Journal is freely extended:

> The Botanical Section of the Iowa Agricultural Experiment Station is making a study of the honey plants of Iowa. This study will take some years to be completed. It is hoped to obtain information on all honey plants, and the insects which visit the flowers for nectar and pollen. We would like, therefore, to get the help of all persons interested in honey-producing plants.
>
> We would be pleased to have the beekeepers send us not only lists of plants visited by honey bees, but specimens of the plants as well; also notes on the flow of honey in different plants. It is highly desirable to have information on the relation of the honey flow to precipitation, e. g., when does the greatest flow occur; in dry weather, medium dry or moist?
>
> Any information which you or your readers are able to give us will be appreciated. Any communications should be sent direct to me. L. H. PAMMEL.

"The Times of Cuba"

Through the kindness of Mr. D. W. Millar, our correspondent in Cuba, we are in receipt of a copy of the July issue of "The Times of Cuba." He states it is the best English publication on the island, and reaches, perhaps, as nearly every English speaking person in Cuba and the Isle of Pines as is possible.

The July number is indeed very fine, and a credit to its editor. In the magazine are included authentic reports from correspondents in different section of the island. Any one interested in Cuba should write to Mr. E. F. O'Brien at Havana, Cuba, for a specimen copy.

Destroying Disease Germs by Heating

The United States Department of Agriculture has issued Bulletin No. 92, written by G. F. White, M. D., Ph. D., as mentioned on page 224. The name of the writer at once stamps it as a bulletin of special interest to beekeepers. A series of experiments has been made by Dr. White, which results in the determination of the lowest point of heat sufficient to destroy the germs of infectious bee-diseases, provided that temperature be steadily maintained for 10 minutes. The different degrees for the different diseases are:

For European foulbrood.....	145.4
" American foulbrood.....	208.4
" Sacbrood.................	136.4
" Nosema disease.........	134.6

It is a matter of much satisfaction to have definite knowledge upon these points. It may not be easy for every beekeeper to know the exact temperature at which a quantity of honey stands, but it is not difficult to determine when it is boiling, and reference to the figures given shows that boiling fills the bill in each case. There is danger, however, that the serious mistake be made of raising the outer part of a mass of honey to the boiling point, while the center of the mass is much below that point. This is especially true in the case of granulated honey. It will be well not to hurry the process. First, bring the entire mass to the liquid state, allowing plenty of time without keeping the honey very hot. If there is no objection to having the honey thin, it will be well to add water. Then bring up the heat until it is certain that the center is boiling, and keep up the boiling for 10 minutes. Honey thus treated ought to be safe to feed to bees. It is hardly necessary to add that if the honey is meant for winter food for bees, care must be taken not to scorch it, else it will be death to the bees. C. C. M.

Honey Exchange for Minnesota

"The Tri-State Honey Exchange" is the name of a new organization in Minnesota formed but a short time ago with L. F. Sampson as president, and P. J. Doll as secretary. Other directors are L. D. Leonard, L. M. Bussey, and Rev. Francis Jager.

The capitalization of the company is $1000, divided into shares of $10 each. The exchange states that it has for its object "to assist honey producers in Minnesota, Iowa and Wisconsin to market their honey and obtain the highest prices, the profit of the association to go to the producer."

Like alll other co-operative concerns, its success depends upon the support given. There is no reason why such an incoporation could not work in harmony with the National association which has the same purposes, the marketing of the honey-producers' crop.

MISCELLANEOUS NEWS ITEMS

Crop Reports and Prospects.—The season of 1914 may be said to be unique in that the large proportion of reports coming of prospects previous to the opening of spring were very favorable towards at least a normal crop if not a very large one. California reported fine prospects, the same was true of Texas, while in the central States and in the East reports came in that clover was plentiful and that honey should be also.

The fact is that these advance "dope sheets" were so alluring that many beekeepers pictured a big slump in the price of honey owing to over-production. Let the reader judge for himself as to the proportion of a normal crop as reported by some of the largest producers in all parts of the United States, men well situated to know what the crop is. We give replies received to all our letters with reference to crops this season. They follow:

At the opening of spring of 1914 around here clover prospects were the best for many years, and with frequent rains up to July 1, the plants and abundance of bloom were all we could hope for. We also had *cold nights* which prevented nectar in the bloom, and it has been rare to see a bee on either white or alsike clover bloom. Our bees were extra strong, and we encouraged brood-rearing. When blooming season came our hives were full of bees (20 Langstroth frames.) Basswood bloom was also abundant, and for five days has yielded well, so that our hives are now full of honey, two to four bodies above the brood. Yesterday we extracted 2750 pounds of basswood honey from one out apiary. The other apiaries are the same. Nothing more this season. These conditions are local to this part of Wisconsin. N. E. France.

Platteville, Wis., July 12.

Part of the Vetter Bros. apiary near Crawford, Nebr. This country is becoming much better for bees with increase in acreage of alfalfa.

The honey-flow has been a total failure here; have to feed to keep the bees from starving until the fall flow. I have over 400 colonies, half of them are located in a good clover district. There is a lot of clover bloom and the weather has been ideal, but the hives are empty. I hope for a crop from Spanish-needle next month.

Knox, Ind., July 14. F. W. Luebeck.

The clover honey crop was a total failure in our locality. Reports received from other points indicate the same condition nearly all over the province, a few localities only reporting a very light yield from clover. Basswood looks fairly well where they have this source of nectar, but at best it is an uncertain yielder to the few localities that have enough of the trees to amount to anything. Present prospects point to the lightest yield of white honey that Ontario has known for some time. J. L. Byer.

Mount Joy, Ont., July 13.

We give you crop reports as they have recently come to us:

COLORADO — LOWER PLATTE VALLEY — Very little from first crop of alfalfa. Bees are in good shape, and if favorable conditions should prevail from now on, a fair crop is possible.

VICINITY OF DENVER—Super work is getting along nicely, and some comb honey has been taken off, but as there is very much less sweet clover than last year, the crop is likely not to be large.

FORT COLLINS, LONGMONT, BOULDER — Super work has almost stopped at present, but it is hoped that when the second crop of alfalfa comes in bloom, it will be resumed again.

ARKANSAS VALLEY — Reports from this locality are conflicting. In some places bees so far have done well, and honey has been taken off. In other places not much super work is done.

MONTROSE AND DELTA DISTRICTS—But little honey in sight yet. Many bees in the orchard districts have been poisoned by spraying clover beneath fruit trees.

NORTHERN NEW MEXICO—Some honey has been taken off. Prospects for a good crop. It is not likely that the Colorado honey crop will be as good as last year, probably two-thirds as much. The quality of the honey taken off so far is fine.

Colorado Honey Producers' Association,
F. Rauchfuss, *Mgr.*

Denver, Colo., July 14.

Your letter of July 10 asking for a report on honey conditions is received. Bees are not doing very much right now, but the second crop of alfalfa is just coming into bloom and we should have a good flow during the next six weeks if the weather is favorable. A good rain would help a great deal. I have taken off something over a ton of extracted honey and 17 cases of comb honey. Prospects are very poor in some districts, but about normal in others. I think we will have honey to ship this year in fair amounts, although we will not have more to ship than last year despite the increased number of bees. Wesley Foster.

Boulder, Colo., July 14.

Late severe frosts with very hot days have cut down the alfalfa and about destroyed all bloom. The chances for a honey crop are very poor. I am feeding the bees.

Halleck, Nev., June 26. J. E Patton.

This section produced no surplus this season. Many colonies had to be fed after clover had been in bloom for some time, but later the flow was heavy enough to give the bees stores to last until it will be time to weigh up and supply additional stores for winter.

It is the "off year" for basswood bloom, and the heavy stand of clover produced but very little nectar on account of very unfavorable weather conditions.

E. L. Hofmann.

Janesville, Minn., July 16.

The honey crop in this section of Ontario will not be more than 10 percent of an average crop. Some report no honey at all, others have had to feed to keep their bees in good condition and prevent starvation.

Claude, Ont., July 17. H. G. Sibbald.

The white honey crop will be very light in New England, so far as I can learn—less than half an average crop.

Middlebury, Vt., July 18. J. E. Crane.

The honey crop in this vicinity is rather uncertain at this date. Should the right

weather conditions continue for 10 to 15 days longer we will get a normal crop of about 50 to 75 pounds per colony. The main honey flow is on now and is heavy. A change to cool or windy weather from now on would be disastrous. Virgil Sires.
North Yakima, Wash., July 15.

We have in the prairie or lime section of this State from nothing to a half crop. Some yards are a complete failure; others had showers and will possibly get a half crop. Plenty of bloom but too dry to secrete nectar. One of our yards did not have rain from the last week in April to the last week in June. But little honey in melilotus after the month of June. W. D. Null.
Demopolis, Ala., July 16.

The white honey flow of the present season has yielded a fairly good average crop in this locality. With a gradual beginning of about a week from alsike clover and a tapering off of the same length of time from sweet clover the clover flow lasted from the middle of June until the middle of July, the heaviest flow being from white clover. Up to date, July 18, bees are still bringing in a little honey from sweet clover during the early morning and forenoon hours. The yield from better colonies is from 140 to 150 pounds of extracted honey, and quite a few of the comb-honey producers are working in their fifth and sixth supers
La Salle, N. Y. G. C. Greiner.

We do not feel that we will have to resort to feeding just yet, though we may have to later on. We have not taken off any honey yet, and will not likely as the clover is drying up. In fact, the clover has not been much at any time, and basswood has not yielded anything beyond what the bees used.
Colo, Iowa, July 15. F. W. Hall.

The season opened early and well, with the bees getting much early pollen and sufficient honey to make them breed rapidly. The result was more swarms than we have had in several years. Unluckily the season did not prove so good all through. At this date we might estimate the honey production at 75 percent of normal in quantity and 85 percent in quality. H. C. Barron.
Hagerman, New Mexico.

It is too early yet to make a definite report. Reports from my men in Idaho and Utah, 10 days ago, indicated very poor prospects. But since, the bees are gathering honey, I estimate from one-half to three-fourths of a normal crop, but conditions could change yet for better or for worse. N. E. Miller.
Logan, Utah, July 14.

Our crop has been a short one, about one-half a normal crop, and practically all the honey is now sold. In the extreme south the season is not over until November, as we usually get a crop of fine white honey in the fall. Grant Anderson
San Benito, Tex., July 15.

We always have a good honey crop in the Imperial Valley. What we call a poor year gives us better than the average of the State. My yield this year will probably be 20 percent above normal. On account of a steady increase in the number of bees here, the amount of honey shipped from the valley will show a greater increase. I have increased from 720 to 1000 colonies this season.
Brawley, Calif., July 14. J. Edgar Ross.

All southern California sections are under half crop. Ventura and Santa Barbara counties about one-fourth yield. I think you can safely put the southern California crop at 40 percent of normal. Northern California is backward and too early to report on crop. Prices are dull. Honey is of excellent quality. See my department.
Orange, Calif., July 15. J. E. Pleasants.

Up to July 1, the prospects were the worst they have been for four years; since then they have been fair. Will have one-third to one-half crop, depending upon the weather.
Nampa, Idaho, July 17. L. C. McCarty.

Conditions are about normal here. Bees are self sustaining now, and possibly storing a little. The crop this year was about 75 percent, the shortage being caused by high winds in the midst of the flow.
S. S. Alderman.
Wewahitchka, Fla., July 16.

Let not the reader be led to the conclusion, from the above reports, that the crop is very short. Fact is, many of the localities are yet to have a part of their flow, while some of the localities which report a fair to average flow are among those which furnish the largest quantities of honey for the market.

We sincerely believe that the shortage of honey in some localities this season, however, will in part make up for the large crop of the season previous, so that the honey market may remain stable. By this we do not mean that the producer should hold his honey for a higher price. Sell your honey just as quickly as you can get it off of your hands (this applies every year), *but* do not let it go at a sacrifice. Study your own local conditions, the conditions of the honey crop, the conditions of the honey market, set your prices accordingly, and then sell what you have as fast as you can.

* * *

Meeting of Mssachusetts Beekeepers.—A joint annual Field Day meeting of the Worcester County Beekeepers' Association and Eastern Massachusetts Society of Beekeepers is to be held at the home of O. F. Fuller, Blackstone St., Blackstone, Mass., Aug. 8, 1914, under the auspices of the State Board of Agriculture. Program as follows:

12:00 m.—Basket luncheon. Coffee served by the associations.

1:00 p.m.—Address by Hon. Wilfred Wheeler, of Concord, Mass., Secretary of the State Board of Agriculture, "Massachusetts as a Honey Producing State."

Address—Dr. Burton N. Gates, of Amherst, Mass.

Bee Disease Demonstrations by John L. Byard and Dr. Burton N. Gates, Masssachusetts Agricultural College. *a.* Materials for Beekeepers. Simple and indispensable apparatus will be explained. *b.* The Manipulation of Bees. Instructions for operating a colony. *c.* The Shaking Treatment for Brood Diseases of Bees. These demonstrations will utilize living bees and essential apparatus.

Address by Arthur C. Miller, of Providence, R. I.

Address by A. W. Yates, of Hartford, Conn. —"Bees a Necessity in Fruit Growing."

Address by E. F. Tuttle, of Woonsocket, R. I —"Beekeeping in Early Days."

Remarks by distinguished apiarists present.

Exhibition—Beekeepers are urged to make displays. Queen bees. Bees by the pound.

A full program! Live bees! Live beekeepers! Everybody come. Ladies especially invited.

Trains to Blackstone may be reached from Boston by the New Haven road. Leaves Boston at 8:00 o'clock a.m. and 8:25 a.m. Leaves Boston at 4:30 p.m.

Trains leave Providence R. I., for Blackstone every hour.

Trains leave Worcester for Black-

Corner of an Apiary of 700 Log Hives at a Monastey in Russia.

stone at 10:30 a.m. and 12:15 p.m., also by electrics. Return to Worcester 4:48 and 6:37 p.m., also by electrics.

Blackstone may be reached by trolley from Boston via of Dedham and Franklin. It takes about 2½ hours from Dudley street. The best automobile route is via Dedham and Franklin.

Eastern Massachusetts Society of Beekeepers, T. J. Hawkins, President. Acting Secretary, 4 Emery St., Everett, Mass.

Worcester County Beekeepers' Association, O. F. Fuller, President, Blackstone, Mass.

I. S. Whittemore, Secretary, Leicester, Mass.

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Native vs. Foreign Bees.—The following letter, copied from the British Bee Journal of June 25, is quite significant. Its author is evidently referring to European foulbrood:

"For the benefit of your readers I should like to give my experiences with native and foreign races of bees. I am located in a district infected with foulbrood, and for a number of years my apiary has not been free from it. I have wasted gallons of Izal and tried every known specific to cure or check it, burning on an average three colonies every season, only to find the disease triumphant the following spring. I had often read of the greater immunity from disease of the Italian and Carniolan bee, so I determined to give them a trial. Two years ago I introduced several queens of both races. I put some of them into colonies which were more or less affected with the disease. One case is worthy of special mention. Into one colony very badly affected I put a golden Italian queen, which, owing to bad weather, was rather long in getting mated.

"When brood appeared, I was gratified to see a uniform mass of pearly-white grubs without the slightest signs of disease. I closed down the hive strong in bees, with a sufficiency of stores, and waited with some anxiety the coming of the following spring to see whether the cure was permanent or not. The month of April revealed solid slabs of brood, which were a delight to look at, every cell containing an absolutely healthy grub. The colony developed into one of hurricane strength, and gave me almost 100 beautiful sections. The beauty of the bees, and the immense number were a marvel to all beekeepers who saw them.

"I should also say that every colony headed by a foreign queen proved healthy, and remained so up to the time of writing, despite the fact that they were all put into more or less affected hives. Let me turn to colonies headed by native or black queens. I had only two swarms last year, both from natives. I noticed slight traces of disease in one of them, which failed to requeen. Now for the sequel. I introduced a black virgin, which I got from a friend about a fortnight after the swarm issued. In due course she mated and commenced laying. You will observe they were treated almost similarly to the colony into which the golden Italian virgin was introduced. More than three weeks elapsed from the removal of the laying queen until any eggs were deposited in either hive. The golden Italian headed a colony of bees of which any one might be proud, while the native black is today at the head of a rotten and dwindling handful of bees. But I am not yet finished. The other colony of natives which swarmed, and which at the time appeared quite healthy, came out this spring in a worse and weaker state than the aforementioned, and was destroyed some time ago.

"I have unfortunately still 7 colonies of blacks, 5 of which were diseased, while every one of the 12 colonies headed by Italian and Carniolan queens is healthy and very strong.

"The native bee has its good qualities, and succeeds very well in districts free from disease, but where such abounds it is helpless and a source of contagion. In face of an experience such as mine, I consider it rank heresy to advocate sticking to blacks under every condition."—Cruickshank, Granton-on-Spey.

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Indian Exports of Beeswax.—The Indian Trade Journal in its issue of April 9, 1914, has an article on the preparation of beeswax, in which it is shown that the total exports of beeswax from India during the official year 1912-13, amounted to 7648 hundredweight (hundredweight = 112 pounds), amounting in value to $225,822, which was considerably below the normal volume and value of exports. Almost all of this beeswax was exported to the United Kingdom and to Germany, the former during 1912-13 taking 3340 hundredweight and the latter 2580 hundredweight, and Belgium, France, and the United States taking most of the balance.

It is stated that the beeswax exported from India is the product of three species of wild bees found mostly in mountainous and hilly districts in Bengal, Assam, the United Provinces, Punjab, southern India and Burma.—*U. S. Consular Report.*

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Willie Wants to Know

"Ma."

"What is it, Willie?"

"Is a 'sweet tooth' a tooth from a honey-comb?"

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Equalizing Colonies

In reading the contributions of that interesting Canadian, J. L. Byer, it is often a matter of congratulation to find that we in Marengo are following so closely the practices he follows. Indeed, it rarely happens that there is any difference to be found, and when that does happen, it may be worth while to discuss it, albeit with nothing but the kindest feelings toward Mr. Byer, for it is quite possible that a face-to-face conference would show the difference much less than appears on the surface.

On page 232 of the Bee Journal for July, he says: "As a general rule it is not good policy to do equalizing before clover flow." Practice here is far from agreeing with that. The first show of any flow from white clover this year was June 6, and the record-book shows that there was no equalizing after May 18, 19 days before the clover flow, and 9 days before the very first clover blossom was seen. All the equalizing that was done—and a good deal of it was done—was done before May 18. Indeed a look at the record of the first score of colonies shows that in all but two cases the equalizing was done no later than May 4.

Mr. Byer is quite right in saying "weak colonies never want for brood provided the queen is in normal condition, and to give more brood to such colonies would be simply making the situation worse instead of improving it." That's true; if the bees have all the brood they can cover, how can they cover any more? But there is a vast difference in the kind of brood. One frame may be filled with brood that is all, or nearly all, sealed and another with eggs and very young brood. The former will turn into active bees two weeks sooner than the latter, and it takes no more bees to cover sealed brood than unsealed and eggs. So a frame of mostly young brood in a weak colony may be exchanged for one two weeks more advanced, to the great benefit of the weak colony.

That form of equalizing is, however, not often practiced here; this year not at all. A quicker and easier way is used. As already said, the weak colony has already all the brood it can keep warm, and to give it more will only be to have it chilled. Well, then, take enough bees with the brood to keep it warm, and the trouble will be remedied. That's exactly what we do, and with a few precautions there is never any trouble.

"Even when the clover comes on I would not think of doctoring up very weak colonies at the expense of stronger ones, as it would be a losing game." That's generally true—perhaps always true, and too much emphasis cannot be placed on the unwisdom of trying to strengthen a weakling by taking from other colonies that have nothing to spare. And when the flow is on it's the strong colonies that count, just as Mr. Byer says. Better double up the weak colonies, and have fewer colonies and more bees, than to strengthen them by reducing other colonies below the effective working point. But strengthening them before the flow, is quite another thing, and at that time no colony is too weak to be worth strengthening if it has a good queen, *provided* all other colonies are sufficiently strong—to be more specific, provided other colonies have not less than 5 or 6 frames of brood each.

And in this connection may be given the invariable rule, that *the weakest colonies are the last to be strengthened.* We do not always have it so, but this year there were a good many colonies with all the brood that would go into one story, and they divided with their weaker neighbors, and when all but one or two weaklings were left it was an easy thing to bring up a 2-frame concern to full strength at once. As a matter of fact we had few or no colonies very weak this year, and about the middle of May each colony had a second story given. Some started brood in the second story; some didn't.

But as already said, a personal conference with Mr. Byer might show that under the same circumstances there might be little difference of opinion.

Beginning With Bees—Danger of Stings, Etc.

Is there danger of being stung? A gentleman told my husband that sometimes one could not prevent a person from being stung, even with veils and gloves. This has prevented him from trying to keep bees. He is an old gentleman; is about to be pensioned, in another year, by the railroad, and we thought he could make some money with bees, but we will have to move first, for this place is too small. I want to move to Riverton, and am going next week to look at a place, where he can make a little and help along with expenses.

Can you help us in this?

M. H. Brown.

Merchantville, N. J.

It is a mistake to suppose that one cannot protect oneself against stings, The most indispensable thing is the veil, and most beekeepers are satisfied with a smoker and a veil, while many do with the smoker alone. To be sure, there are bees so gentle that with careful handling one can even get along without a smoker, but generally the smoker is used. The purpose of the veil is to protect all parts of the head and neck that are usually exposed.

One good way of making a veil is to take cape net or similar open material of black color, soak the starch out of it, sew it in the form of a bag open at each end, with a rubber cord shirred into each end; slip the veil over the hat, the one rubber cord being at the hat-band while the other is stretched down in front *very tightly* and pinned with a safety-pin to vest, suspender, or other part of the clothing.

Different kinds of gloves may be used. Rubber ones are good but uncomfortable. Hog-skin gloves are good, although not very fragrant. Other leather may be used. Two thicknesses of heavy cotton will do. A pair of old shirt-sleeves may be attached to the gloves at the wrists and fastened on the arms. Thus protected, the operator is safe against voluntary attacks, but sometimes bees on the ground may crawl up the legs and sting when pinched. To avoid this tie strings about the trouser-legs at the ankles; better still, use bicycle clips, or trouser-guards, such as bicyclists use.

A. H Fralick in His Apiary at Homer, Minn.

There is a difference in bees as to their stinging. Some are so cross that veil and gloves are needed, even with plenty of smoke. Others are so gentle that they may be handled without either smoke or veil, if one makes slow movements and is careful not to handle frames roughly or jar the hive.

After a little familiarity with bees, your husband will likely not mind a few stings, and the more he is stung the less effect the poison will have. The probability is that you may be able to handle bees as well as he.

You say you will have to move to a larger place. If you have a place large enough to set the hives, that's all you want. The bees forage in all directions, and a small place should do you as well as a large one.

How Many Supers?

"Many men of many minds." On page 233 of the American Bee Journal for July, Mr. Wilder says: "The great trouble with the average beekeeper is he hasn't supers enough." Eight pages farther along, Mr. Greiner says that "to make bees do their best, no more than two supers must be allowed to be on a hive at a time." It would no doubt be an enjoyable thing if we could have the two men discuss fully their different view points. Mr. Wilder does not give very fully his reason for thinking that the average beekeeper does not have supers enough. Mr. Greiner is more explicit in saying why two supers at a time is enough. Yet it must be said that in this quarter the usual practice is more in accord with the Dixie man. Of course, Mr. Greiner is no novice, and it may be that for him two supers work all right, but it is a little difficult to see just how we could get along here with never more than two supers at a time. He says, "Three, four, five, and even more supers on a hive scatter the working forces over too much territory, which discourages them, and produces 'loafing.'"

The count of supers on our hives July 3, showed that quite a number of hives had on them five supers each, and a few six. To be sure, the top supers in many cases are empty, and would remain so until put down in the lowest place, but there were also quite a number of these top supers into

Mr. Geo. Seastream in His Apiary at Pawnee, Ill.
He has nearly 200 colonies, and winters his bees in the cellar.

which the bees had entered and begun work. It would hardly appear that the forces were so scattered as to become discouraged when they would begin work in a fifth super, empty, and *on top*. Mr. Greiner says "they must be crowded onto the foundation." That is just what seems to have been the case. Moreover, the crops of honey we get hardly warrant the belief that our bees are too much scattered and discouraged. One can but wonder what those bees would do if the only room they had was two supers, when they are crowded to overflowing in five or more supers!

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Making Increase

The making of increase by the Alexander plan did not work quite so well this year as in 1913. There is a question whether early in the season is the best time to make increase. It is all right if the colonies can all be brought up to honey gathering strength in time for the main flow. But this cannot be foretold definitely. Increase can be made in August after it is seen that the flow is good, and such increase in most cases will be ready for good wintering, and if not in the best condition it can be prepared for good wintering by giving brood and honey.

In August I take out combs of mature and hatching bees from those colonies that can well spare them, putting them into my new hives for increase. I plug the entrances with grass for several days. The grass generally wilts and lets the bees out in that time anyway. Then the bees, or most of them, stay in the new location. If the flow late in the season is good, three frames with a queen-cell or virgin queen will make a colony to winter, but if by Sept. 15 they are not strong enough I take out more brood and hatching bees and strengthen them further from populous colonies. In this way I give some of my strong colonies room for the queen to do more laying.

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Honey Crop Conditions

The sweet clover along the lower Platte valley was mostly killed by the high water, so that prospects are not very favorable there. The first crop of alfalfa was cut early, and unless the second crop does something there will not be much of a crop gathered in that part of the State. The lull between first and second crops of alfalfa has been longer than usual in Boulder county, and some of our bee-men are rather discouraged. The crop here will not likely be as large per colony as last year, but there are more bees to gather it. The quality is very fine, however, thanks to the hot weather we have had, which ripens the honey so well.

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Disinfecting Hives and Supers

Mr. John T. Greene says, on page 237 of the July American Bee Journal, that disinfecting with the blue flame blow torch is primitive, slow, and not so good as his method. Perhaps it is primitive and slow, but the work done by the blue flame torch cannot be improved upon if in the hands of a good workman. The blue flame torch will reach the cracks and corners better than the method described by Mr. Greene, and I have used Mr. Greene's method on hundreds of hives.

The torch method of disinfection is pictured and recommended in one of the Government bulletins, and for the man with a small number of hives to treat is just the thing, as there is no danger of damaging nice new bee-hives with too much fire.

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Odor of American Foulbrood

Mr. E. G. Carr says that he has not found a case of American foulbrood in New Jersey, the odor of which could be detected a few feet from the hive. The case is very different in Colorado. The odor of American foulbrood is noticeable 10 to 20 feet from badly diseased hives on hot summer days. Many cases have been detected before ever touching a hive or cover.

The odor is hard to describe, and the word of people unfamiliar with the diseaae is likely to describe it closer than the description of the beeman. A good rich case of American foulbrood in Colorado smells very much "dead" and "decaying" according to several people I have asked. It has of course a distinctive odor different from a decaying mass of dead bees.

Apiary of J. E. Miller, of Caldwell, Idaho. Note the cement cover on the fourth hive in front row. "It never blows off."

BEE-KEEPING IN DIXIE

Conducted by J. J Wilder, Cordele, Ga.

Roaches and Moths

Mr. Wilder:—There are a lot of roaches in my bee-hives, and they eat considerable honey. Also, I am troubled with the moth. How can I rid my bees of these pests? I would like to get Italian bees. What is your advice in this matter? It has not rained here in four months, and I have had to feed all the time to keep my bees from dwindling. Could I sow buckwheat or something else for them during such a honey famine? A. S. Inglin.

Cottage Hill, Fla.

Roaches are a great nuisance sometimes about an apiary here in the South. They get in the honey house and do nearly as much harm as mice in destroying things, besides falling into honey. You can't keep them out, for they squeeze in and cut their way through almost any place. They do not stay much in a house or room that is occupied by people or stock, but once they get started they will soon take possession of a remote room or house containing plunder or storing room of any kind.

In small colonies there will be about as many roaches as bees in the hives and around them, and they consume as much honey, if not more, than the bees, and they, too, will gnaw away the comb. The bees seem to treat them as their neighbors or friends, and not as their foes, and live together in peace. The roaches, as a rule, do not stay right in the cluster of bees, but around in the corners of the hives and places where the bees cannot go, keeping such places open so the bees cannot close them up.

I am at a loss to give a remedy or plan that will destroy this pest except just killing them as you find them, but I do know that though they may populate a place ever so much, they will after a while disappear entirely, and possibly for several years not one will be seen.

Mr. J. M. Roach, a beekeeper of Daisy, Ga., and another species of the "roach" family, says "that he could not get along in his bee-business without roaches, for his wife and children take an active part with him." Some beekeepers claim that the roaches consume but very little honey during winter, and that they help the bees in small colonies to maintain heat.

It is much easier to get rid of bee-moths. Weak colonies should never be allowed to have more comb than they can occupy, for it is in this outside or unoccupied comb that the moths develop. Such comb should be removed and set in a hive-body and placed over a strong colony when there is no honey-flow; but early in the spring and during the honey-flow these frames of comb can be exchanged for frames of brood, and in this way weak colonies may be built up to normal.

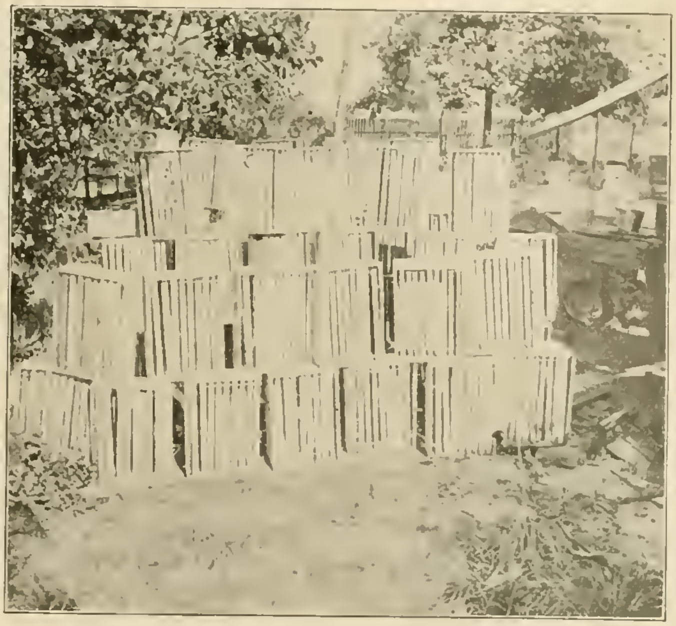
It would not be advisable to plant anything for your bees, for it would surely fail during such a drouth. If it had not been so dry you would at least have had nectar enough coming in to prevent starvation. You acted wisely by feeding.

As soon as your bees start building up again, you might introduce some Italian queens, but not at present, for you may have some losses from the run down condition.

Cleaning Out Combs

The cut here shown illustrates how I have my combs cleaned of honey after extracting. These combs are placed back in the supers and then set out in the open at the edge of the apiary, just a few steps from the extracting room. They are set on ends, so if it rains the water will not fill the combs. During a sultry day the bees will not make much headway cleaning them because the adhering honey is very thick and gummy, but during the night the damp cool atmosphere will soften it and it is all quickly removed by the bees next morning.

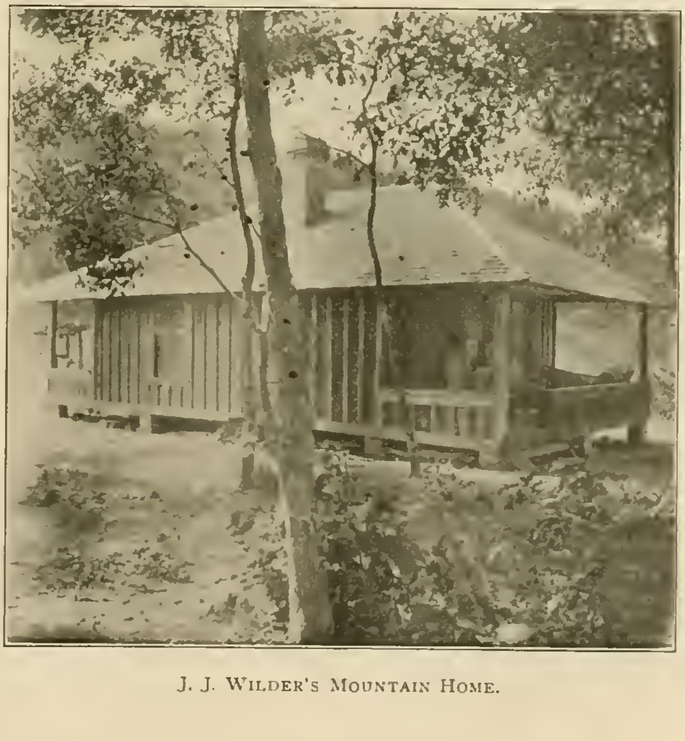
I have practiced this for years, and no trouble by robbing has ever occurred, although there are over 100 colonies in this yard, and sometimes a number of weak ones. This keeps them busy, and they never "nose" or bother about the extracting house, the doors of which are sometimes left open for an hour or more. They seem not to see or think of anything except these supers. They never tear down any comb in these supers.



Wilder's Method of Cleaning Up Combs.

This picture was taken early one morning, just after they had left them. No bees are around them, and a team is driven right up to them and they are loaded on. This might appear as a bad practice and dangerous to undertake on account of robbing, etc. I don't think it would be if they were started early in the spring while the honey flow was yet on, and kept up until all extracting was done. It is surely not any more dangerous than giving the wet combs back to the bees directly. This is certainly convenient, and if the supers set out several days, there will be but little danger from the moth.

While I am on this subject let me say that as I was looking over one of my apiaries with my apiarist, I found a frame of comb left out leaning beside a hive, and it contained considerable honey. I asked him how that happened, and he said he overlooked it while manipulating frames, but, said I, "Why didn't the robbers take to it?" He stated that on the week before he left a super of honey setting on end



J. J. Wilder's Mountain Home.

out among the hives, which he overlooked while working in a great hurry, and that on his return five days later he found it and another frame of honey near by, and that it was unmolested by robbers. I also found that another one of my apiarists had raised the covers of the hives over one inch for ventilation, thus exposing honey, and it had not induced robbing. I thought this remarkable and worth relating.

[It is well to tell the beginners that such things happen only during a heavy harvest. Bees seem to prefer the nectar of flowers to honey already gathered.—Editor.]

Our Mountain Home

The cottage here shown is the writer's summer home at Mountain City, Ga., located on the edge of the Blue Ridge Mountains. It is here I expect to spend the remaining summers of my life.

We have a natural gap through the mountains known as Roburn Gap, through which runs a railroad. The mountain views from the slow going train are perhaps not excelled anywhere. The fresh pure, cool mountain air is always circulating, making the summer climate ideal, the thermometer registering close to 90 degrees all the time. The pure cool mountain spring water is abundant everywhere. Delicious fruits of almost all kinds are plentiful. Just at the rear of my cottage I have a small orchard which supplies us with fruit, and at the rear of this rolls up Massingale Mountain to a height of about 4000 feet. It has a bald peak where the writer spends many pleasant hours enjoying the surrounding mountain and valley scenery.

Apiary Work

It is not the time of the season yet to slack up on apiary work, but if it has been well kept up from early spring a week's vacation could be taken and enjoyed. We have not ceased apiary work, such as requeening, making increase, building up the weaker colonies, and getting all ready for the summer flow. In fact, we have done this all along while taking off honey, and we have every colony in fine trim for the flow, which is now on.

If other beekeepers have not done this they should do it at once, in order to harvest some honey at the end of the summer flow and be prepared for the fall flow, and get in good condition for winter. In the great cotton belt supers should be cleaned and prepared, using full sheets of foundation in frames or sections.

The Crop and Market

As a whole the spring crop of honey has been about an average in Dixie, and naturally the market is a little dull at this time. Many beekeepers have still considerable honey on hand unsold, and are offering it a few cents below the usual price. This is a mistake, for it does not increase the sales, and a little later, when the market is more open, it will move at the regular prices.

There is no use to lower prices when the market is dull. Let the supply move some and you will get your price.

There has been a large crop of honey gathered in the mountain sections. This is the cause of the dullness of the market. This home supply will soon be gone.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Prospects Not the Best

July 13, and hardly a pound of clover honey in the supers, and the clover is through blooming for the season. Briefly, this sums up the situation in this section, and from reports received from other localities, I fear things are not much better in many places in the province. Basswood may yield some honey in some localities, but as it is not open yet no definite information will be available for 10 days at least. We look for none from that source here in York county, owing to scarceness of trees, and from the fact that not half of the trees we have are going to bloom this year. At the north yard the prospects for basswood are fair, and we are hoping that some nectar will come from the bloom, so that we will at least have *some* white honey.

At opening of clover bloom the hives were heavy with honey gathered from hard maple, many colonies having from 10 to 25 pounds of this honey in the supers. If the hives were all weighed today, I doubt if they would average as heavy as they did a month ago, even if not a pound of this early honey was extracted. This will give the readers an idea as to what a dearth of nectar we have had. There was not a day during clover bloom that one could open hives for any length of time without robbers nosing around. Prospects are on an average for a buckwheat flow, provided we get some showers, but at the best in our locality we expect little more than enough for winter stores.

The failure of the clover crop naturally hits the man hard who is depending upon bees alone for a living, and in seasons like this the man so situated wishes he had a few acres of garden truck to put his time in, and incidentally bring enough money to pay expenses, but in seasons like last year he would not be able to attend to any other kind of work, and with labor hard to secure, it is quite a problem as to just what course to take. One thing is sure, the men who have more than one string to their bow will, this season at least, have reason to be thankful.

While things look blue just at present for the specialist beekeeper, we should not forget the business is an uncertain one, and seasons like the present have occurred before and will come again. One redeeming feature of the present situation is that many who have seen visions of "easy money" in beekeeping will now know by actual experience, which is a better teacher than rosy pictures of the business, that there are two sides to the question, and even if in some years the colonies do yield comparatively large returns for capital invested, seasons like the present help to materially pull down the average of profits.

In many parts of Ontario people have gone "bee crazy," and the sale of beekeepers' supplies has reached enormous proportions. If conditions are at all general over Ontario, as I have reason to believe, I venture to say that 75 percent of the foundation, hives, etc., that have been purchased have not been used, and will be carried over until another year.

Rearing Queens and Requeening

Having little to do in the line of work that comes along with the honey flow, my intentions were to try and rear a few queens for home use. But the weather has been so changeable, and the dearth of nectar so pronounced, that nothing has been done at this date (July 13). With the bees dragging out the drones, prospects for queen-rearing are not very good to the novice in the business, and I feel like waiting until buckwheat starts to bloom, hoping that it will do enough better than the clover to allow one to work in comfort among the bees.

During buckwheat bloom is a splendid time to do requeening, no matter if you buy or rear your queens, and any failing queens, or queens old enough to be likely to fail next spring, should at this time be superseded, if not earlier in the season.

Odor of American Foulbrood

After reading what E. G. Carr has to say about the odor of the two kinds of foulbrood, page 236 of the American Bee Journal for July, I think his olfactory nerves are all right. Certainly I found, as he says, that in well developed cases of European foulbrood one could smell the characteristic oder some distance from the hives, and only once can I recollect anything like that with American foulbrood. In that particular instance, a whole apiary of about 60 colonies was simply rotten with American foulbrood, the owner having ignorantly spread brood from diseased colonies into others early in the season. The glue pot odor could be smelled any place in the yard if on the windward side, but that is the only time I can recollect anything like it. Unquestionably, in Ontario at least, European foulbrood has a decidedly *nasty* odor.

The good point made by Mr. Carr is mentioning that larvæ dying from American foulbrood almost invariably lie on the lower cell wall, while those dying from European foulbrood are in any shape. It is *one* of the real differences between the two diseases. The *sure* test for American foulbrood is the ropiness of the dead larvæ. When the ropiness is pronounced, you can safely diagnose it as a case of American foulbrood.

Toronto Beekeepers' President

It is my pleasure to know Mr. Chapman, president of the Toronto Beekeepers' Association, and I would endorse what Secretary Hopper says about him. One thing Mr. Hopper has not mentioned, and this omission has something to do in explaining the good meetings, good order at such meetings, etc. While Mr. Chapman is a first-rate beekeeper, this calling is a side line with him, as he is police inspector of the city of Toronto. See the point? The members just have to be good, or else Mr. Chapman would trot them all off to the police court.

Protecting Supers in a Dull Season

Last year at this time it was a problem to get enough supers to accommodate the bees, as the good flow of nectar gave little time to do any extracting. This year it is a problem to care for the supers so that moths do not achieve their destructive work. Many of our super combs have pollen in them, and while little evidence of the moth has appeared yet, one has to be careful to guard against the pests, and it is surprising how much damage can be done in a short time when once they get started.

If one has fairly tight boxes in which to store the combs, prevention is very easy. A small quantity of carbon bisulphide will destroy eggs and larvæ if already present, and as long as there is any odor of the drug among the combs no moth will venture in, even if the box is open enough to admit them. Of course, one can pile up the supers over the colonies, but when expecting a light flow of only a super or two at the most, as we do from buckwheat, it is a nuisance to have an over abundance of room for the bees. But no matter what course you pursue, do not allow the moths to destroy the combs, as ready drawn combs are as good as cash to the beekeeper, and even if not used this year, will likely be handy at some future time.

Advertising Honey

What you say, Mr. Editor, on page 226 regarding the matter of advertising honey is interesting reading. The conversation you had with the gentleman in the diner, and the examples he gives by way of illustrating the value of advertising, emphasize what many of us have claimed. "Postum" and "Spearmint Gum" which he mentions, are articles of which the selling price is very much more than the cost of production. That is the difficulty we are up against. If an article costs us 2 cents, and we could by advertising sell it for 25 cents, what a fund we could put in for advertising.

I believe that honey can be advertised profitably, but never as profitably as "Spearmint Gum" or "Postum." By the way, is that not a mistake in figures when $2000 is mentioned as the annual expenditure for advertising "Postum?" I had been led to believe that one or two ciphers should be added to that figure, and I expect the latter sum would be nearer the mark.

Characteristic Southern California Scenery—Sages in the Foreground.

CALIFORNIA BEE-KEEPING

Conducted by J. E. Pleasants. Orange, Calif.

Honey Crop Small, But Excellent

The season, which has been most uncertain, is now sufficiently advanced to give an idea of the crop. A conservative estimate from many different sources gives the honey product slightly under a half crop. We have alternated between failure and success so long that it has been a very difficult season to report. There have been times when the outlook was flattering. Then there would be an abrupt change in the weather and for a time we would think we were in for a total failure. Then things would look up again.

The condition of apiaries in different localities has been variable, excellent reports from some and very discouraging news from others. The press, getting some reports from those who were doing well and were of course optimistic, published glowing accounts of a great harvest. We are great on that sort of thing in southern California. But it sometimes does harm, and in this case these reports and those of others who should know better have done much to weaken prices. I refer to the exaggerated editorials of the Western Honey Bee. This our only bee journal in California, is now edited by a man who it would appear is more interested on the side of the buyer than the producer. It is certainly not pleasing the beekeepers at large. The Executive Board of the State Association has made a grave mistake in their selection this time.

Our crop is small, our honey is of excellent quality, white and water-white, of a heavy body predominate, and the highest prices buyers are quoting to us so far are 6 cents for water-white, 5¼ for white, and 5 for amber. So far I have heard of but few sales, and I believe all the large apiarists will hold their honey until prices advance.

Mr. M. H. Mendelson, our leading beekeeper, in answer to an inquiry about the crop, June 22, says: "The season has been a disappointment. Only about one-fourth crop with me. (Ventura Co., Calif.) The weather has been unusually cool. It is an off year. At the coast it is almost a failure."

Some other localities report some better. My county (Orange) has slightly under a half crop.

Quantity and Quality of Eucalyptus Honey

In reply to question regarding the quantity and quality of eucalyptus honey, I will quote Mr. Roy K. Bishop, Horticultural Commissioner for Orange Co., Calif., who is also a beekeeper of experience. He reports on four species only—*E. globulus*, our common blue gum (very useful for fuel), *E. robusta*, *E. corynocalyx*, sugar gum, and *E. rastrata*, red gum. He says: "All four varieties are heavy nectar producers. Probably blue gum and *robusta* are the best. These come in the fall and winter, so that bees are much benefited in stimulating early breeding. The honey is poor for table use, dark and of rank flavor. There may be others that would produce a good grade of honey, but all we have here of any quantity are not the proper varieties."

Mr. Bishop does not think it profitable to plant eucalyptus for honey alone, but that the trees are of much value for many other purposes and the honey yield would be a clear gain. My idea also is that, as they are of great value as shade trees, for fuel, windbreaks, fence posts, etc., and many species very ornamental, they would be a distinct asset on our mountain bee ranches, and would be both useful and ornamental to cover much waste land Also, we should try more of the different species.

Some years ago an Australian beekeeper visited our section. He said the species called there "yellow box" was their main source of honey supply, and that the honey was good. There is some confusion of names here among the writers of eucalyptus, so it is very hard to be sure of some species. Prof. McClotchin, whose work is good, speaks of a "yellow box" as *E. melliodora*, or the honey-scented gum. I have four species which are all heavy nectar producers on dry land—blue gum, sugar gum, a species of iron bark and the leucoxylon rosea. The last is a decidedly ornamental tree with rose-colored blossoms.

Sages and Other Honey Plants Abound in the Foothills.

Notes From Abroad

By C. P Dadant.

Zug, on the lake of the same name, a few miles north of the famous Rigi, is one of the prettiest cities in Switzerland. An unpleasant occurrence happened there in 1887. A part of its quay or wharf sunk into the lake, with a number of buildings. An inscription on the lake shore commemorates the unfortunate event.

In the descriptions furnished by the tourist guides, we find the following: "At Rosenberg, 15 minutes from the city, on the east slope, is a noted museum of apiculture."

An old beekeeper living at Mettmenstetten, who is also a cutler, Mr. Huber to whom we had been recommended by our Langres friend, Mr. Beligné, came to meet us at Zug, and with him we called upon Dr. Theiler, who keeps the museum above mentioned. He has some 40 colonies of bees, all in Burki-Jecker hives, arranged in his bee-house like so many doors to a closet. Here I found the first of the famous Rassenzucht or race selection of German Switzerland. Three or four different races were shown me. The selection is simply a production segregation made by breeding drones and queens from select colonies of native bees in breeding apiaries or mating stations located where bees are scarce. It is said that the breeders of Rassenzucht depend upon a 2 kilometer isolation. This is altogether too little. Mr. Theiler acknowledged to me that drones can and do easily travel 4 kilometers, aside of the distance the queen may span herself. Their largest breeding apiary produced 224 queens in the season.

I gained but little faith in the Rassenzucht, for not only they show a less average of yield than in western Switzerland, but bees of this selection, carried into the Canton of Neuchatel, side by side wifh the Italian hybrids of that region, showed no superiority in the surplus yield, according to statements made to me by reliable men. However, the lower average crop of German Swiss beekeepers may be ascribed to the exiguity of their hives, which cannot be enlarged, either in the brood-chamber or in the super, beyond the size of the original receptacles. To secure a large crop of honey it becomes necessary to remove sections or extracting frames as fast as filled. None of our beekeepers would consider this practical. A house apiary, to become thoroughly serviceable, should permit the storifying of hives, to at least their normal capacity. This assertion may not be appreciated by those of our European friends who do not use expansible hives, but it is nevertheless based upon long experience.

I do not wish to be understood as condemning the Rassenzucht, for it is in the line of progress. But it will take the selection of many successive generations of the best honey-producing bees to reach a positive result. But most beekeepers, even among the critics of the German enthusiasts, recognize that, sooner or later, a wise selection will bring visible improvement.

Mr. Theiler gave me a suggestion, on the May disease, which may be worth enquiring into. He attributes it to the consumption by the adult bees of an excess of pollen and perhaps moldy or unhealthy pollen. Some day, some one will ascertain the exact cause.

Mr. Theiler mentioned 2330 meters (about 7700 feet) as the highest altitude at which bees were known to gather honey. This agreed with similar remarks made by Mr. Gubler and others. I wonder how this would compare with the honey-producing altitudes of the United States? Many of the best honey-yielding plains of Colorado and mountain States are above 5000 feet. But how far up do bees produce honey in amounts worthy of note? I was also told that the honey of high altitudes was finer, whiter, and of better flavor than from the plains, even when from the same kind of blossoms. Is this correct?

The bee-museum is very interesting. I saw there a vast amount of bee-literature, though, of course, mainly in German. The oldest was a book of Johannes Coleri, dated 1611, comprising agriculture and horticulture with bee-culture. There was a translation of Virgil into German, made in 1724.

Numerous samples of wax scales as produced by the bees were in the exhibit. All were white, and Mr. Theiler confirmed my opinion that wax scales, when first exuded from the abdomen of the bee, are always of a pearly whiteness, which readily changes by contact with other objects, especially pollen dust.

I saw wax works and wax paintings of the very highest finish; among others portraits of Aristotle and Socrates in relief wax. I there found also that the patron saint of beekeepers is Saint Ambrose, bishop of Milan in 340 A. D. An interesting statement for lovers of antiquities!

From the Rosenberg one has a magnificent view. The little city of Zug is under your feet, the lake beyond, the mountains in the distance on all sides as well as behind. It is an orchard country, and the trees, hundreds of years old, are of great size.

Our next visit, on the afternoon of the same day, was to Dr. Brunnich, our interesting contributor, a most capable microscopist. He speaks French and German with almost equal ease. He also speaks and writes English. His home is at Oberwil, a mile or two south of the city. It is reached by boat on the Lake of Zug, but we walked across the meadows and orchards from the Rosenberg.

Instead of smoke, Dr. Brunnich used a gentle water spray over the bees. It appeared to be as efficient as smoke, and he holds that it is preferable.

I saw a number of interesting things in his apiary. First of all is his method of marking the queens, described by him at the request of our subscribers on page 200 of our June number. A very small spot is dropped on the corslet, where it dries instantly. The queen is marked either right or left or on the center as may be desired. This little red spot is quickly seen, when the comb is raised, and helps wonderfully in finding her. I take pride in being able to find queens as readily as any one. But with this method of marking, there is no need of great practice. Dr. Brunnich says that in many instances people are deceived in the results of a queen introduction because the queen introduced has not been sufficiently marked. With this method there is little room, if any, for error.

Mr. Brunnich has tried the experiment made by others as well as by myself of giving a natural swarm a hive entirely filled with drone-comb, to ascertain whether bees would change or rebuild the comb. The only thing they did was to narrow down the mouth of the cells to worker size, when the queen proceeded to lay worker eggs in them. This result has thus far been universal in a trial of this kind. It positively disproves the assertion that bees do tear down one kind of comb to rebuild it in another. The only instances of this have been where the comb was moldy or in some manner damaged.

But the most interesting part of Dr. Brunnich's entertainment was his microscopical work. I was very sorry to be only a novice in microscopic studies. But I saw enough to perceive that his work is of the most accurate character. His explanation and exhibit of the salivary glands by magnified photographs were most interesting. There has long been a difference of opinion among entomologists upon the production of the pap or royal jelly which is fed to queens during both their larval and insect life, and to the workers in the early larval stages. Cheshire, after Schiemenz and Leuckart, held that it is produced by a pair of salivary glands which exist in the worker bee and not in the queen and drone. Others hold the view that this pap is produced by the chyle stomach of the worker bees and is properly chyle food. Dr. Brunnich has tried feeding the nurse bees with honey colored with lamp black, and the larval pap produced by those bees was entirely devoid of any dark color. He deduces, from that, that the larval food is not a production of the chyle stomach.

It was our intention to go to Mettmenstetten the same evening, to the home of Mr. Huber, who had invited us beforehand and had kindly accompanied us on this Zug visit. We, therefore, left the Brunnich home after bidding adieu to the Doctor and his pleasant family, with an invitation to visit us in America. In less than half an hour we were at Mettmenstetten, where we spent the following day.

Mr. Huber, who is, as I said, a beekeeper and a cutler, is also a practical farmer. He was intent upon showing us the curiosities of this part of Switzerland, and announced to us that he would take us in his carriage to some grottoes 10 miles away. We were to start early in the morning. However, as they had but one horse and his son announced to me that they had just one more wagon load of hay to bring in, as the end of the hay harvest, I took it for granted that they must first haul in the hay. But the carriage was ready and at the door before we had finished our breakfast. I said: "What about your hay?" "Oh, they have gone after it long ago." "But I thought you had only one horse?" "We don't haul hay with the horse; we hitch up the cows." And sure enough, in came the load of hay with two fine cows pulling it up to the barn. During that day we saw not

Gruß
vom Rosenberg Zug
Jos. Theiler
Rosenberg
Zug

Home of Dr. Brunnich.

ZUG – Gesamtansicht
von Gugl aus

A View of Zug.

only teams of cows drawing loads on the public road, but a single cow hitched to a wagon tongue intended for a team. We saw a bull and a horse hitched together and making a very fine team indeed. This was more interesting to us than all the grottoes. Everything is so pretty and neat, in those Swiss villages! Even the manure piles are squared and trimmed as if they had been built with a plumb and square. Apples, pears and plums are the principal crop. The fruit trees dot the fields in every direction, without any particular order, for they are hardly ever in rows. The pear crop is immense, and they make both apple cider and pear cider. The pomace is afterwards put into big casks or vats to ferment and make "schnapps" or apple-jack. Then in order that nothing be wasted, they press the cast-off pomace into round cakes that look like 6-inch sausages. These are put upon racks to dry in the sun and are used for fuel.

They have the finest cattle in the world, large brown cows, that are kept in the barn and curried daily. The wages of a cow-boy are $2.00 per week and board. The young cattle and those of the cows that do not give milk are sent to the mountains for the summer. Nothing is wasted, and every inch of tillable ground is used. But what beautiful roads, and what a pleasure it is to travel upon them! We spent an entire day traveling through the country with our hospitable friend.

I proposed to take you as far as Zurich on this trip, but I have exceeded the limits and must put it off until next month. We took our leave of Mr. Huber, his son and his pretty daughters, and reached Zurich on the evening of Aug. 23.

CONVENTION PROCEEDINGS

The Iowa Field Meet at Delmar

Some 70 persons gathered at the Coverdale farm, near Delmar, on the morning of July 7. The automobile, which is becoming a farmer's vehicle, renders such meetings much more successful than formerly. There were about ten of these gathered in the yard by 11 o'clock a.m. I had myself arrived by rail at Maquoketa, 10 miles away, the previous evening, and through the kindness of Mr. and Mrs. Gallagher, with their son Clinton as chauffeur, I had a fine ride from Maquoketa through the rich Iowa rolling plains to the place of meeting and back again. A plentiful supply of moisture had made the landscape particularly attractive, for everything was green except the harvested wheat.

Mr. Coverdale is a large farmer as well as an extensive beekeeper. He is one of the champions of the long ill-judged sweet clover. He considers it as the most profitable of all legumes, and his horses, hogs and cattle grow fat upon it. The accompanying picture of four clover leaves shows his preferred variety of sweet clover, which is lighter in the stalk and in the leaves than the ordinary highway sweet clover. He asserts that it is also less bitter. But there is little doubt that all hay-consuming domestic animals may be readily trained to like sweet clover.

As a supporting testimony to his own experience, Mr. Coverdale gave his hearers some quotations from an article in the Prairie Farmer of July 1. We reproduce the main passages of this. It is an account of the visit of over 100 Illinois farmers to the sweet clover farm of W. P. Graham, of Rochelle:

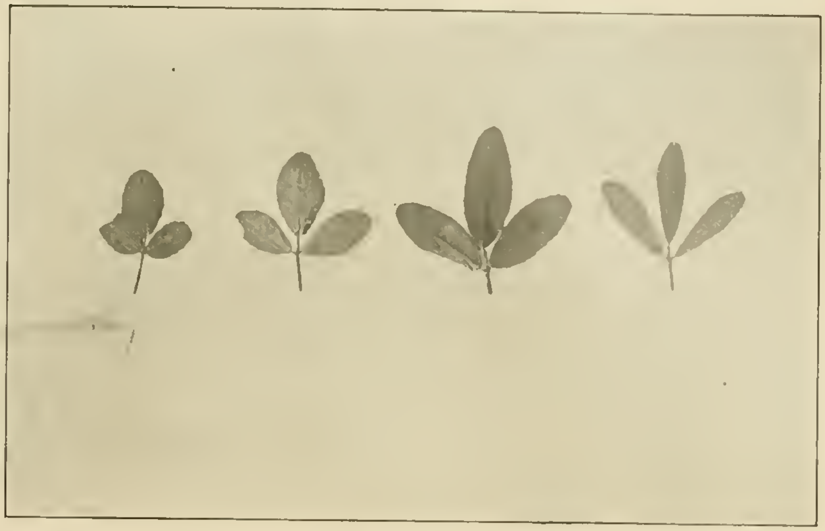
"Mr. Graham owns several farms, and the combined acreage of sweet clover on all of them totals about 500 acres. Although born and reared a country boy, Mr. Graham is one of those who returned to the soil upon finding that town life was shortening their days too rapidly. As he was about to embark in the farming business he became interested in Dr. Hopkins, methods of improving run-down land, and as that was the kind of land he had to deal with, he set the Doctor's theories to work. He also set one of his own ideas to work, that of employing the rankest sweet clover, instead of some of the smaller legumes, to turn under for organic matter and nitrogen. By its judicious use in carefully arranged rotations, Mr. Graham has materially increased the productiveness of his land. Seeing his results, a number of his neighbors who laughed at 'Graham's weeds' a few years ago, have now come to grow sweet clover as a matter of course.

"Mr. Graham sows his sweet clover with oats, barley, and winter or spring wheat. A drill with seeder attachment is used, the sweet clover being sown directly in the rows with the grain. In this manner 15 pounds of sweet clover seed per acre was included with some wheat sown last spring, and the stand seemed all that could be desired. Sweet clover was originally put to use as a soil improver on this farm, and in telling his experience with it, Mr. Graham advised farmers who engaged in building up worn-out soils to first apply limestone so as to grow clover and turn the leguminous crop under and to apply the phosphorus when one finds that it is necessary for larger crops; but first of all get an abundance of organic matter into the soil.

"In addition to being a soil improver sweet clover is Mr. Graham's trump card in the beef producing game. In summer it is pastured and it is made into silage for winter feeding. At the time of this visit 63 head of cattle had been feeding on a 40-acre field of sweet clover since April 19, and it was being cut June 10, because it had grown faster than the animals could eat it down. It was yielding at this cutting at the rate of about three-fourths of a ton per acre. This field was sown a year ago last spring with barley. It made growth 18 inches tall by Sept. 7, and was pastured 55 days, or until Nov. 1, 1913. During this 55 days 29 feeders weighing about 870 pounds at the beginning, grazed on this pasture and gained an average of 154 pounds apiece, or nearly 3 pounds per day. Besides the pasture these cattle had only salt and water and what straw they consumed from having access to a straw stack. Twenty-eight of these steers from Dec. 11 to Jan. 11 also made an average gain of 91 pounds per head on sweet clover silage, and 215 pounds of ground ear corn for the lot per day.

"'I wouldn't have missed that trip for a hundred dollars,' said one of the Livingston county farmers as he left Rochelle on the return trip."

Mr. Coverdale has been a grower of sweet clover for 17 years. He found that it will grow where alfalfa turned yellow and died. But in order to secure the best results, it is necessary to use about two tons of crushed limestone per acre *on all acid lands.* In addition to its great value as a soil restorer through the great quantity of nitrogen stored in the nodules of its roots, exceeding that of any other legume crop, in addition also to its invaluable features as a honey producer, sweet clover has proven to him one of the most valuable plants for stock. As much as three cuttings are made during the second summer of its growth. One crop may be secured before gathering a seed crop. For the latter, the crop is harvested with a binder and the clover thrashed in similar manner to the thrashing of red clover.



No. 1. Yellow Sweet Clover (*Melilotus officinalis*). No. 2. *M. alba*. Tall, Slender, Coverdale's Choice. No. 3. *M. alba*, Highway, More Bitter. No. 4. Alfalfa.

An excellent dinner, profusely served at the handsome home, was offered to all visitors from away, by Mrs. Coverdale and her daughters. Mrs. Coverdale is as much of a beekeeper as her husband, and has often put the supers, alone, on an entire apiary. They are active, wide-awake, thrifty farmers and beekeepers.

A sudden shower, late in the afternoon, put an abrupt end to the meeting. Luckily, it was not sufficient to impede the travel of automobiles, and the crowd was soon scattered far and wide over the rich rolling hills, hoping soon to meet again.

Several leading beekeepers were present at this meet. Among them I will mention Messrs. Pellett and Snyder, president and secretary of the Iowa Beekeepers' Association, Prof. Bartholomew, of Ames, and Mr. L. A. Syverud, of Canton, S. Dak.

But a very interesting subiect remains for me to treat. That is the account of my visit at the Gallagher home and apiary during my stay at Maquoketa. Mr. Gallagher is a splendid beekeeper. I will speak of this in a separate article soon.—C. P. Dadant.

CONTRIBUTED ARTICLES~

Handling Honey

BY C. C. CLEMONS,

A COMMISSION MERCHANT.

(*Read before the Missouri State Beekeepers' Association.*)

WHAT I do not know about bees would make a very large book, for all bees look alike to me. However, I cannot say the same for honey. I have seen a great many different kinds of honey. Honey, as a food, is one of the most wholesome of all sweets. It is also one of the most delicious. There is no preparation made or put up by man that can compare with the product of the bee. Therefore, it is up to the producers to keep up the high appreciation that the consumers of this wholesome and delicious sweet now have by being cleanly and sanitary in preparing it for the market.

We all know that the bee-business requires about as much brains and study as any other branch of industry, necessitating not only talent but care and attention, and every man in the business ought to have pride enough to take the best care of his bees; also prepare the product so that it will bring the top market price.

Extracted honey should be strained, if necessary, and put up in *new* 5-gallon cans. If second-hand cans are used, see that they are absolutely clean. One of the members, who is present, told me he bought some extracted honey put up in second-hand cans, and while the honey was as fine white clover as he ever handled, the cans were dusty and rusty. He also said he could tell what kind of bees the producers of this honey were. This honey also contained flies and soil, consequently this depreciated the selling price, whereas if it had been strained and the cans clean the honey would have been all right. This producer was not dishonest, but careless.

I would like to tell what happened in our place of business as regards dishonesty. Mr. Leahy, of Higginsville, Mo., came in one day and asked if we had any beeswax. I told him that we had just received two nice large cakes, about 100 pounds. We agreed on the price. He then said, "I have never done any business with your house; you can ship the beeswax C. O. D. or I will remit you." I told him he could remit, as I had never yet, in all my dealings, run across a dishonest beeman. In getting this wax ready for shipment, we had to cut one of the

Fed on Sweet Clover.

cakes open, and, behold ! we found a 10-pound stone in the first cake, and in cutting into the other cake we found the same thing. I began to lose faith in bee-men. I wrote the gentleman, from whom we got the wax, and he came to see me. He said he had bought the wax from two peddlers late one evening. He paid for the two stones and my faith was restored.

Well, now, a little more about honey. Until lately we have always been unfavorable to more than two grades of comb honey, No. 1 and No. 2, but this fall we have had two cars of comb honey from Colorado graded under the new rules of the Colorado State Beekeepers' Association, and we were well pleased with the grading. These two cars were certainly graded according to rules.

A great trouble with some beekeepers is they do not or will not comply closely with the grading rules. We also approve of the manner in which the two cars, just mentioned, were marked, as each grade is easily distinguished from the others. Each grade is marked with a letter. For instance, fancy was marked with a "C," No. 1 with an "H," and No. 2 with a "P." Of course, any letter of the alphabet could be used, the object of changing the marking of the cases to letters being very obvious.

For instance, a producer often has a quantity of honey slightly travel stained but of good weight, hardly of good enough quality to grade No. 1, but certainly worth more than the price prevailing at that time for the No. 2 grade He cannot, conscientiously, pack and grade this lot No. 1, and certainly if he calls it No. 2 he will have to take the lower grade price. Therefore, by marking the cases with a letter the lot could be sold strictly on its merits without misrepresentation by either the shipper or commission man, and without the purchaser feeling that he was paying too high a price for off grades. The cases marked by a letter can be sold with the understanding that the letter either represents a grade, either

Brood Sows Grazing on a Sweet Clover Pasture—Farm of Frank Coverdale.
(Courtesy of Dakota Farmer.)

The Bee Men in the Coverdale Apiary.

No. 1 or No. 2. or that it was the mark used by an individual shipper. We would recommend, however, that standard grading rules be adhered to as closely as possible.

The 24-section case is about the only case that is now being used, either single or double deck, the 12, 18, and 28 section cases being out of date.

As to sections, we have been asked the question, "Which are the most favorable with dealers, 4x5 or 4¼x4¼ sections?" We find some difference in opinions, but not enough to speak of. We do not think it makes any difference with the consumer, if the honey is clean and good weight. They say "Cleanliness is next to Godliness," so the next thing to grading is cleanliness. What looks nicer than a nice, white, clean case of sections and clean honey? Buyers always give this kind of package the preference.

Always nail the cases securely, but use small nails so that the top may be taken off without splitting it. Buyers generally want the top removed so they may see if the sections run uniform as to quality, and in making local shipments I think you all know it is very important that you crate your cases.

Another important thing to remember is, do not fail to use separators, and be careful not to separate so closely that your sections will not weigh over 10 or 12 ounces.

Kansas City, Mo.

Colony Odor of Bees

BY ARTHUR C. MILLER.

MR. EDITOR:—In your foot-note to Mr. Hastings' article on page 237, July, 1914, you imply that I am one of a very few who doubt the existence of colony odor. If that is what you intended, I beg leave to correct you. If we may judge by analogy it is very probable that each colony does possess an individual odor peculiar to itself. Also, if we judge by behavior of the bees under sundry conditions, they are guided by some unseen or unseeable factor which is best explained by ascribing it to odor. Such supposition is strengthened by a knowledge of the bees' acute sense of smell for some things.

With such foundation for belief in the existence of individual colony odor, there has been built up little by little a hypothesis as to the individual bee's possession and retention of such odor and sundry practices of bee-culture have been based on such supposition. I contend that facts do not warrant the belief in the retention by the individual bee of its colony odor after a greater or lesser absence from the colony. Or if we grant the possession of such odor, I contend that it plays a minor part in the bees' reception among strangers. Furthermore, we have no proof or assurance that a bee confined for a time in an alien colony acquires the odor of that colony.

Even though such things are almost universally believed by beekeepers does not make them so. Once everybody believed the world was flat (and some do now), but it is not so. Once all beekeepers believed in a "king bee," but we know differently now. Once all beekeepers believed that bees arose from putrid meat, that wax was gathered from flowers, that bees stored honey in the cells with the tongue, that nectar was evaporated and ripened by exposure on the tongue, that a tongue extended toward a queen or other bee was offering or giving food, that pollen was rammed into cells with the bees' head, all of which we now know is not so. And there are sundry other things commonly believed which are known to those who have investigated to be not so.

The Coverdale Apiary.

As far as I am personally concerned it would be to my advantage to have the beekeepers believe as many erroneous things as possible, and base many laborious and costly practices thereon, for it would make it so much easier for me to compete with them and to make my business greater and more profitable than theirs. But in the long run it would not help me. Ignorance is a drag on the whole nation, and though I might profit today by not helping others, tomorrow my children might be losers by the ignorance of some of their fellowmen. So after all it is really selfishness which seems to be the motive for my contentions.

Concerning Mr. Hastings' doubt of my observations, all I can say is that judging by his article his observations have not been extensive enough. While at one time colonies resent the intrusion of any strangers, at another time any bee may enter anywhere. One day we may unite bees in any way we choose and the next day it takes all the skill we have. Under many conditions we may give queens to alien bees without any precautions whatever, and another day we must use much care.

Until beekeepers will lay aside their prejudices, and will weigh each observed fact, it is almost useless to cite sundry examples where bees behave as if recognizing an odor, and the equally

Sweet Clover Just Before Bloom.

numerous times when their behavior suggests either the absence of any odor or their complete ignoring of it.

To avoid misunderstanding, let me repeat that I believe each colony probably does have its individual odor (there are exceptions), and that it is possible that each bee thereof may possess and retain for a time such colony odor, but what I do most positively assert is that such odors do not play anything like the important part in practical bee-culture which has been given to them, and that beekeepers are blind to their own best interests when they fail to lay aside prejudice and blind belief and weigh fact against fact.

In conclusion, let me say that when believing in the importance of odor as a factor in bee behavior, and basing my practices thereon, I had as much labor and as many troubles as the rest in carrying out the ordinary routine of bee-culture. Since relegating odor to the background and proceeding along independent lines, I have accomplished much that is ordinarily considered impracticable and have materially lessened the labor.

Providence, R. I.

Isle of Wight Disease

BY GEO. W. JUDGE.

I NOTICE that the so-called "Isle of Wight Disease" (microsporidiosis) which has made such havoc among the bee population in this country, is engaging the attention of the American bee papers of late. I do not think it is generally realized in America what a menace this disease is to the industry. In Great Britain, during the last few years, it has spread rapidly all over the country, and today there are very few districts indeed that have not been visited by it. In many localities every colony has been destroyed; in fact, in the comparatively small area of northwest Kent (in which I reside) there is not 5 percent of the colonies alive today, that were in perfect condition three years ago.

The causative agent (*Nosema apis*) is very destructive to bee life, and it is to be hoped that every effort will be taken to prevent the introduction of the disease to America.

I take this opportunity to enclose one of my photographs of the remains of a colony that had been destroyed by this disease. It shows a comb taken from a diseased hive with the queen among the small cluster of dead bees.

It is one of the characteristics of this disease that the queen is the last to survive, and from her position among the cluster of dead bees, it is pretty evident that her death was caused by chill, rather than from the effects of the disease.

This photograph is one of a set of original photographs recently exhibited at the Conversazione of the British Beekeepers' Association on this disease.

Barrowdene, Kent, England.

The Launch in Beekeeping

BY GRANT ANDERSON.

THE season of 1914 has been an unusual one. The heavy rains in winter started the honey plants to growing, but later the weather turned out dry and cool with fog on warm mornings. The bees built up slowly on heavy stores, and the result was we were a full month later getting our first honey out than we were last spring. Swarming has also been later and lighter. The honey is of fine quality and the demand very good. We have orders now for more than 10,000 pounds of honey. The season, while late, promises to be a good one; bountiful rains and warm sun will surely bring the bloom.

Our new baby yard that we started this spring has attracted considerable attention, located as it is on the very bank of the Arroyo, in sight of people passing in boats.

I enclose a photograph of our big launch Queen B, with a light load of bees. The young man in the boat is my baby boy 15 years old. My two boys are my only helpers in the outapiaries. We have a house at our new baby apiary, where the boys live most of the time and attend to the lowe apiaries. Our launch, Annie Lee, will take the boys to any of the lower apiaries in a few minutes and carry a supply of hives and other fixtures for the bees.

As you will see, the Queen B is strictly a work boat. We planned and built this boat for this special purpose, and after using her for several months we are satisfied that it would be difficult to build a better one for the purpose. While the Queen B is a work boat, there are no boats on the Arroyo that can outrun her or run in as shallow water as she with the same load.

A good boat is the handiest thing for hauling honey. Some may think that lugging honey down and up hills to and from the boat would not be pleasant. We think so, too, but we don't do it. We have wire cables stretched from the top of the bank to the landings, and wheel our honey to the upper end of the cable, and there a grab is made for the purpose, grips the case, swings it up and rolls down the cable with it and a man in the boat lowers it. At the home landing we have a derrick with which to lift the honey out of the boat, swing it around on to a little platform which is suspended from another cable on which two rollers run, and the honey is run up the cable to the top of the bank and placed on the truck ready for the depot or honey house. This plan does away with most of the heavy lifting and saves time.

Our road is always good, rain or shine. Some one may want to know what I am doing while the boys look after the lower apiaries. Well, I happen to be busy most of the time. I have one honey yard and three queen yards to work besides transporting the hives and other supplies to the boys, shipping queens and honey and looking after the business generally. The cost of running the Queen B is less than the cost of feed for a team; it is less trouble and more satisfactory.

For moving bees there is nothing as good as a boat; we can move them with safety the hottest weather we have. We can move a good sized apiary at one trip.

San Benito, Tex.

Grant Anderson's Launch Loaded with Bees.

The Odor Theory

BY H. SPUHLER.

IT was with a keen interest that I read the articles of Arthur C. Miller and of Dr. Brunnich upon the introduction of queens and the odor theory.

Without doubt the Miller method of introduction is excellent as concerns its simplicity and the results obtained. But I am astonished as to his view point concerning the role of odor in the domestic economy of the hive. In his last article Mr. Miller says: "I admit that each colony may have its individual odor, but I deny that a bee, after a long foraging trip, will retain enough of it to affect her reception by an alien colony. On the contrary, every observation indicates that it is wholly the individual bee's behavior which governs her reception." To prove this he cites the fact that field workers, returning loaded from the field, are accepted everywhere, and that in addition one can find Italian bees in colonies of black bees as soon as this race has been introduced in an apiary.

To solve the question of odor we must remember that all the faculties of the bees are intended primarily for the conservation of the race. If our theory is well founded, the odor must serve this purpose, and the bees must recognize each other by their individual colony odor. I have often made the experiment that chilled bees gathered up and placed at the entrance of a hive are driven away, and even carried away, by the bees of that hive. If, on the other hand, during a honey flow, some laden workers go astray into the wrong hive, they are readily accepted. This is easily understood. In a time of abundance, no one is afraid of thieves, and there is very much less guarding than in a dearth. Besides, the colonies of an apiary visiting the same kinds of bloom, it brings the bees' odor nearer together. Then, too, bees like men, are unlikely to drive away those who bring them something. In a dearth, the conditions are entirely different, every strange bee, even a young bee, is mercilessly driven away; the struggle for existence demands it.

It is true that robbers are easily recognized even by their behavior, their guilty actions betray them. But the control of strangers is made more by odor than by sight. The Italian bees mix readily with the blacks, but the inverse rarely happens. They usually refuse to accept of common bees. This is difficult to explain.

Orphan bees are usually accepted everywhere, when they come as supplicants, fanning their wings and humbly asking for admittance. But if the apiarist tries to unite them forcibly, without necessary precautions, the greater number of them are killed. When the uniting is done upon nuclei, or normal colonies transported in the place of others the union is more likely to succeed owing to the reciprocal embarrassment although they evidently know the united bees to be strangers.

The fact cited by Mr. Miller, that drones have a free pass everywhere, brings forward another question, that of sex odor. He says: "Have not drones the odor of their own colony?" Unquestionably, but much stronger than the colony odor is the sex odor, and this is what protects the drones. At the time of swarming the entire colony is sexually excited. The worker bees are females, though imperfect, and at this time they evidently have to a certain degree an amorous sentiment for the males. It would be against the purposes of nature if the bees of a colony attacked strange drones, for the natural law favors the mating of the queen with a drone from another hive, so as to avoid the noxious in breeding.

It must be understood that the sex odor of the queen is in no way inferior to that of the drone. Swarming time furnishes us with evidence of this, since matings take place between colonies 4 or 5 kilometers apart. But the sexual odor of the female does not disappear after fecundation. It remains in queens as well as it does in other living beings.

During an apicultural demonstration I was transferring a Carniolan colony and placed the queen in a cage so as to give the students opportunity to examine her more closely. After a time this queen was returned to the bees and the cage was laid a few feet away. After the operation, I went to get the cage and was surprised to see it covered with young bees which had been accidentally scattered in handling the frames. They had been attracted by the odor of the queen though she was in there no longer.

Another time, after hiving a transferred colony, I noticed the bees scattering in every direction. The queen was missing. Luckily I had another queen in reserve in a match box. As soon as this match box was placed in the hive, the bees gathered around it and formed a marching line from the outside while fanning their wings. I liberated the queen, and it goes with-

At the Coverdale Farm Near Delmar July 7.

In the Apiary at Colo Looking for Queens.

out saying that she was well received.

The sexual odor is manifested not only by the queen but by the entire colony. This may be exemplified in uniting swarms. There is no difficulty in uniting primary or secondary swarms together. But if we try to unite a primary swarm with an after swarm, it usually results in a failure. The reason is that their sexual odor is different, the secondary swarm being under the excitement of rut, while with a fecundated queen the primary swarm is not under such excitement.

His First Experience with Bees was at the Colo Field Meet.

The knowledge of the role played by odor in the management of an apiary and in the life of the bee facilitates the conduct of the apiary. But the "behavior" of both the bees and the apiarist is also an important factor which we must not undervalue. An experienced apiarist working quietly at his bees, handles them with greater success and is less stung than a beginner. It also happens that a frightened queen is sometimes attacked by her own bees.

How about Mr. Arthur C. Miller's success in his method of introduction? It is based upon the same reasons that cause the success of beekeepers who introduce queens by putting the colonies in the position of swarms. In either case the bees are reduced to despair. An artificial swarm without a queen, having no resources, will accept any queen given. By the Miller process the colony is so disturbed, excited both by the smoke and the want of ventilation, that the bees are only looking for safety from the terrible conditions created. The combination of smoke and of this excitement produces a distinctive odor which pervades the entire hive, and it is for those reasons that the queen is accepted. So the method of Mr. Miller depends upon the same factors as other methods but in a different manner. His great merit consists in having supplied so simple a method, which will render great services to beekeepers.

Zurich, Switzerland.

Second Iowa Field Meet

BY FRANK C. PELLETT.

THE second Iowa field meeting, which was held at the Hall apiary at Colo on June 10, was a decided success, although the attendance was not as large as had been expected. The weather was threatening in the morning, and rain fell not many miles away, but it cleared nicely before noon and those present spent a most profitable day. A register book was kept open, and at the close of the day contained more than 60 names of those in attendance.

The day was spent in discussions and examination of the Hall equipment and bees. After a most excellent dinner served by the Ladies' Aid Society, Prof. Bartholomew, of Ames, gave a very good talk on "Value of Scientific Research to the Beekeeper." Prof. Bartholomew is in charge of the new course in beekeeping at the Iowa Agricultural College, and has outlined some of the things that the State should undertake, which the individual is not in position to carry on alone .

Most of the Hall bees are very gentle, and although most of the day was spent among the hives, and nearly all were opened one or more times, there was little trouble with stings. One colony proved to be an exception to the rule, and boiled out in the good old style, and raised a considerable commotion. One youngster who had followed operations very closely and asked many questions, had his curiosity entirely satisfied with a souvenir under his eye. He did not again visit the yard.

Altogether those present voted the day a most pleasant one, and Mr. and Mrs. Hall and daughter Annette splendid hosts.

Atlantic, Iowa.

A Century of Progress

BY J. E. CRANE.

A FAMOUS French surgeon made the statement a century ago that surgery had reached such a degree of perfection that it could not be expected to go any farther. Amputations and removals of some external growths, and in extreme cases removal of bone pressure on the brain was about all that could be done at that time. As we look at it now, surgery was then in its infancy.

With the discovery of anesthesia, with chloroform and ether, a new start was made in the art. The discovery that mortification was the result of microscopic bacteria was a wonderful help. Then came antiseptic treatment with increased skill until today the surgeon goes to the very center of the body and head of a patient. Immense improvements have been made in many other lines. Methods of travel have changed until today we can cross the ocean or the continent in a few days, or with our own conveyance travel over our country roads at 30 miles an hour. In fact, the dream of the ages has come true when a man may fly over mountains and valleys, rivers and lakes.

How about beekeeping? A century ago there had been little improvement in it over that of 2000 years ago. The studies of Langstroth gave us the movable-comb hive; placing beekeeping at once on a solid foundation; eliminating the element of chance or guess work; enabling us to accomplish work we had previously not dared to attempt.

To subdue and keep the bees in subjection, Quinby soon brought out a hand smoker, the forerunner of all our modern smokers. With smoker and a veil we were masters of our bees.

But more was desired. How nice it would be if we could take the honey out of the combs and return them to the hive to be filled again! Very soon a thoughtful German brought out the honey extractor. I remember, about 1868, attaching a cord to the ceiling overhead, and after twisting it very tightly, fastening the other end to the bail of a pail in which I had placed a comb, and let it whirl just to see if it would work. And it did, and in 1869 I made a machine with which I took 240 pounds of honey from one hive. What dreams of future success were mine!

Field Day Group at Colo, Iowa, June 10.

But we found that the larvæ would come out of the brood-combs with the honey, for we had no way at first to keep the queen from laying in the extracting combs. So some ingenious mechanic made the queen-excluding zinc for honey-boards. To this was added an escape to remove the bees from both comb and extracting supers. That has saved us a great deal of time and vexation.

We can now save our combs already built, and get much more honey than before. But comb was so valuable, why could we not in some way make artificial combs? To help the bees, I remember feeding or giving them thin scrapings of wax which they accepted and worked into their combs. After many experiments and many failures comb foundation was brought out in its present form; one of the greatest helps to modern beekeeping.

Honey boxes or supers were mostly made of ⅜ or ½ inch lumber, of all shapes and sizes, with sometimes a little glass in one end to show the comb. These were sent to market in dry-goods boxes, or even barrels. Later came glass boxes, and then the beautiful and convenient single combs with shipping cases to match them in appearance.

I must not forget the introduction in this country of Italian bees, which gave a wonderful impetus to advanced beekeeping. It gave a fresh interest in artificial queen rearing until it has become a science of itself, and adds immensely to the pleasure and profit of keeping bees.

One hundred years ago it was thought that buckwheat was about the only farm crop that would amount to much for bee pasturage, but about 1866 alsike clover was introduced as a valuable plant for both forage and honey. In 1869 my brother and I had two acres in bloom. What a sight! It well repaid for the seed that cost us $1.20 per pound. In this same year M. M. Baldridge wrote to the American Bee Journal extolling the value of sweet clover for bees, which is now becoming an mportant factor in many places. Since hat time alfalfa has shown its ability, especially in the West, to yield honey abundantly. These have all become important farm crops, and will help to make good the loss from our diminishing basswood forests.

One hundred years ago little was known of brood diseases. Since then they have been so carefully studied that we can very largely control them. In many, or most, of our northern States we have bee inspectors to instruct and assist beekeepers in overcoming these drawbacks to successful beekeeping.

Our modern wax extractors are almost as much of an improvement in getting wax out of old combs as the honey extractor in removing the honey from the combs. Methods of handling bees, prevention of swarming and marketing honey have greatly improved. Of beekeeping literature there was little in this country. But we have had for many years "Langstroth's Hive and Honey Bee," "Mysteries of Beekeeping Explained," by Moses Quinby, "Root's A B C," Dr. Miller's "Fifty Years Among the Bees," "Advanced Beekeeping," by Hutchinson, and other smaller works. Several periodicals devoted almost exclusively to the interests of beekeeping give us everything of value or helpful. The Bureau of Entomology of the Department at Washington, D. C., has for many years been working with us and for us in solving the problems beekeepers have not the time to work out.

With improved methods and implements during the latter part of the last century, honey became so abundant that the price went very low. I was able to buy the choicest white sage honey in the Boston market for 6 cents a pound. But the low price and abundance led to its use in cooking and manufacturing; a single firm, I am informed, now takes about 100 carloads a year for this purpose. Its use as a table luxury is increasing, and it can now be found in hotels, restaurants and dining cars, as well as on the family table.

The immense value of bees in the cross fertilization of flowers has been discovered in recent years. While this does not perhaps add to the wealth of the beekeeper, it may add greatly to his happiness to know that his bees are of as much value to his neighbor as to himself.

Has beekeeping now reached such a degree of perfection that there will be no further improvement? We do not think so, for there are yet many problems not less difficult of solution than many of those already solved. How fascinating the business of beekeeping seems, compared with even 60 years ago!

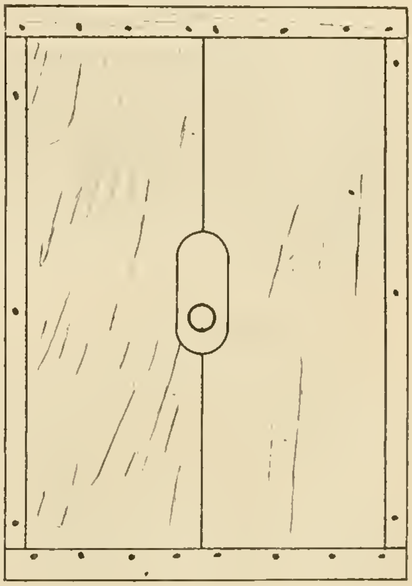
Middlebury, Vt.

The Bee-Escape Board Improved

BY GEO. A. BOYUM.

A BEE-ESCAPE is a device to get the bees out of the supers. It permits them to leave the super and prevents their return.

Illustration: A represents a common bee-escape board with a Porter bee-escape in the center. When a bee-escape is placed under a super, the remaining bees at once begin to look for a place to get out. Naturally they go first to the corners or cracks where the light comes in, in search for an exit. With a board like A, the bees follow the edge or corner around the board probably several times before they chance to cross over the middle of it and discover the opening through the escape.

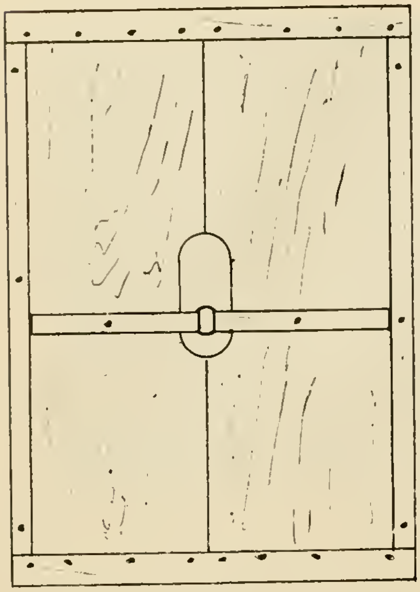


A.

Ordinary Escape Board.

With a board like B, having two slats nailed to it, as shown in the illustration, the bees may begin to follow the edge or corner at any point, and will always be directed right into the opening in the escape. With this added improvement all the bees leave the super in much less time.

The slats should be fastened by only one nail in the middle, so that they



B.

THE SLATS TACKED ON.

may be turned as shown in illustration C, thereby permitting the escape to be taken o t. The slats serve to hold the escape, tin or screen in place; they should be ⅛-inch thinner than the outside rim, *i. e.*, 3-16 inch thick for the common bee-escape board. The bee-escape boards should, however, be ⅜-inch deep with ¼-inch slats across the center.

Rushford, Minn.

Initiating Father

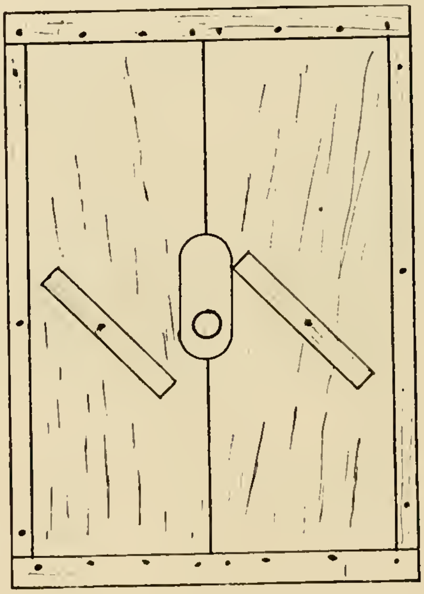
BY W. EDGAR WOODRUFF.

UP to this time mother had always been the bee-man at our house. Father's closest acquaintance with the winged tribe consisted of cluttering up good lumber in an effort to nail "ready made" hives together, and in sampling rather freely the liquid sweets when they were placed upon the table. Yes, and it must be confessed, that father had been known to boast to our neighbors of the fact that this "new rig" or that new piece of furniture was purchased with money that *we* made out of *our* bees.

Mother had grown up in a bee-yard, so to speak; had made her way through college by means of them, and so nothing was more natural than that she should tend a few bees. That was all very well so long as they could be kept in our own bailiwick, but when mother branched out and leased a large out-yard the bee business began to take on a serious aspect. At least it seemed so to father, for it began to be hinted around the table and in the secret councils of the home that father might now and then contrive to take a hand. But father always managed to keep both of his hands occupied with other matters. The fact is, he made it a point soon after this out-yard deal was put through to secure a job that took practically all of his waking hours. But somehow, scheme as he might, there would come sneaking into father's ken the consciousness that sooner or later this expanding bee business would call loudly for a lift from his right arm.

Before extracting time father burnt up great areas of gray matter trying to figure out a way to keep his vacation from coinciding with that eventful and dreaded occasion. Finally a neighbor with strong arms and a somewhat intimate acquaintance with the secrets of Father Langstroth, was employed to assist mother in taking the honey. So while these two were immersed in the mysteries and pleasures of Honeyland, father was wading knee-deep in a certain trout stream. But even there father's mind was not entirely at peace. The "blue jinks" kept whispering to him that sooner or later his day—his Waterloo—with the bees would come. And come it did, and that with a vengeance.

On Sept. 1, father's job ceased, petered out, *vamoosed*. Not that he got fired, but that the statute of limitation was called upon that sort of work. This left father upon the high seas of idleness, which state was at once pounced upon by mother as affording the proper hiatus for father's initiation into bee lore. (Right here, gentle reader and frowning editor, let me confess to you that the father in question is yours truly. So, by your leave, I shall hereafter use the personal pronoun.)



C.

ESCAPE BOARD ACCORDING TO GEORGE A. BOYUM.

I said my job ended on the 1st. It was just one day later when my wife—in a burst of confidence, like she was disclosing some glad, good news—told me that the late crop of honey was just fairly groaning at the out-yard for somebody to extract it.

"Dad," said she with her sweetest coo, "you and I are in for the finest little outing of our lives. We will take the small rig, a camp outfit, and you may take your fishing tackle—what a time we will have!"

Whenever my wife wishes to take the sting out of a disagreeable thing she promises me a day's fishing. However, upon this occasion a deep blue "funk" filled my horizon, and the silver hope of a day with the finny tribe failed to cause the clouds to lift. For, to tell you the truth as between man and man, I was mortally afraid of bees. One was sufficient to set my nerves to buzzing like a dentist's torture-machine, while the thoughts of facing millions of them—oh, what's the use?

There came to my mind the memory of that occasion when I proposed to my wife, or rather, when I first attempted to propose to her. For, as I stated before, her mother kept bees. Yes, most decidedly she kept bees—kept them in the garden, the back yard, the front yard, and upon the front porch. In fact, her bees acted as a sort of barrier to keep the young men away from her girls. But, as for me, I was so infatuated that (at that stage of the game) not even bees or yellow jackets, for that matter, would prevent me from dashing headlong where angels were wont to tread. For, believe me, those girls were some enticing!

When I proposed, or to speak more accurately, when I was in the act of proposing, the girl and I were out in the garden where the bees were flying thick and fast. She was plucking lilac blossoms, and I was upon my knees declaiming—

> "Doubt that the stars are fire,
> Doubt truth to be a liar,
> But never doubt my ———."

Just then something happened—happened big, swift, effective. That last word stuck in my throat. I grasped at the seat of my—oh, it's none of your business upon what particular part of my anatomy that bee deposited its sting.

But I wander from my story. Oh, yes, I was saying my wife wanted me to accompany her to the bee-yard. We went; that is, my wife went. I sat in the rig and supposedly held the lines. One thing only of that 9-mile drive do I remember. My wife stopped at the post-office to get the mail. She remarked she had received a letter which didn't interest me at all. At any rate, it didn't interest me then. I was trying to pump mental vim into my despairing soul in an effort to make myself believe I was not afraid of bees. I, who, since coming to the West, had poked a mountain lion out of a den with a pole; I, who, had met a cinnamon bear face to face and lived to tell the tale—I simply would not be afraid of a mere insect! While thus practicing my soul we reached our goal, and before I realized it, we were at work.

"My! there won't be over five or six hundred pounds of this crop," exclaimed my wife after she had hefted a few supers. She proceeded to smoke the bees out of a dozen or more supers and I carried them into the honey house. Everything was made ready, and she showed me how to uncap the combs of honey and place them in the extractor baskets. She gave the extractor a few turns, reversed the baskets, and then stopped to show me the letter. It was a telegram and ran as follows:

"Be at the Capitol Tuesday morning. Fate of Woman Suffrage Bill hangs on a full representation of our committee.

(Signed) "MRS. BIXBY."

"Papa, dear," said my better half, a half formed tear in either eye, "that's tomorrow. I ought to go, but how in the world could you manage this extracting alone?"

The world stopped revolving. The sun stood still. The moon went out, and the stars refused to shine. After about four æons—"Never mind, my dear, I can manage to do it somehow. Possibly get a man to help me," I ventured.

Now I am not on principle opposed to woman suffrage. Indeed, I had written several articles for the local press during the campaign in its favor. And, too, when my wife was appointed upon a committee to go before the legislature and lobby for the bill, I felt that the whole family had been honored, and now that a call had come for her to go I could not say her nay. But as for me—if the seven labors of Hercules had just then been thrust under my nose they would have looked as tiddledywinks beside the dumbfounding work before me. To extract or not to extract—that was the question; whether it was nobler to run and hire a man to "juice" those bees for me, or to stand my ground and fight it out by main strength and awkwardness! I chose the latter course. And before the erstwhile companion of my stings and hysteria was out of hearing I was evermore making that old extractor hum. It hummed so loudly that its toe-hold gave way, a cable "busted," and I was forced to put it in dry dock for repairs.

The next thing that went end-to was when, in my muscular enthusiasm, I turned so fast that the honey overran the pail and found a receptacle in my boot. When my wife left she gave me a spoonful of lard and cautioned me to keep all the bearings of the machine oiled. I wanted to use axle grease or cylinder oil, but she insisted on the lard. I was soon to find out why. I guess I failed to open the gate to the extractor wide enough, for the bottom of the tank soon filled with honey. I began to notice concentric circles of dark honey. On examination I found that a too generous application of lard on the bearings in that neighborhood was the cause of the streaks. Then I was forced to throw away the honey and oil the bearings again.

That night I attempted to put the empty supers back on the hives. Every time I lifted a cover from a hive the bees literally blackened me. The little rascals acted as though they were saying: "Now, here comes the fellow who took our cloak; now he will take our coat, also. Let's go for him." And they went. My veil was the first one Eve made for our ancestor, and my gloves had ringworm in the fingers. To enhance my esteem for the job, I wore low shoes! Now, don't smile, you smug, complacent veteran! I maintain there is nothing funny in a bee sting. It's the most matter-of-fact, business-like transaction I ever met with. But there are some folks who are mean enough to smile or even guffaw when some poor dupe gets the "hot stuff."

The following day I managed to "swipe" 25 or 30 supers from the bees and began extracting. The honey-flow had ceased; the bees began to "wheewhee" all around the house for a taste. I couldn't keep the uncapping knives hot. The honey was so thick the extractor wouldn't throw it out. I got hot and began to slam-bang things around in great shape. In the *melee* I turned over 5 gallons of honey, which proceeded to splash out of the honey house to feed the bees. I soon had the nicest mess of robbing on my hands you ever saw. I was still warm under the collar when the uncapping knife ricocheted over a bumpy comb and shaved a quarter-section off the palm of my hand. A little later my shirt sleeve caught in the free-running crank of the extractor, which incident left me in a state of statuesque nudity. Then I sat down to perspire and meditate. "Thinks I, if these are the joys of beekeeping spoken of by the A B C book, then let me to more peaceful pursuits; such, for instance, as lion taming or lassoing crocodiles."

The man who had made up these hives had evidently got hold of the wrong instruction sheet—possibly a sheet explaining how to put together a Wright aeroplane. The tin rabbets were put in flat so that the rib stuck out inside the hive. The frames were the Hoffman shoulder spacing type. These he had nailed so that both shoulders were on the same side of the frame. The bees had been trained to swim in propolis and subsist upon slumgum. So that the tools needed to manipulate the hives consisted of a crowbar and a can of nitroglycerine.

In spite of all these things, like Paul of Tarsus, I persevered. By the last of the week I finished the job, and Sunday morning greeted my smiling family at home.

"My, but you are a mess!" greeted my better three-quarters. "You look as though the land was flowing with milk and honey, and there were no boats for you to cross in. But were you as successful on your mission as I on mine?"

"Three thousand pounds," replied I boastfully, "and a wagon load of cappings! But say, old girl, do you know I'm the biggest fool that ever swatted a bee or fanned an extractor."

"How's that?" asked my wife anxiously.

"Why, I went and bought that bloomin' yard."

Cottonwood, Ariz.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Requeening During Summer

In reading an old Bee Journal of nine years ago (1905), I noticed an article on "Requeening During Summer," by its present editor, in which he says: "It is a mistake to requeen colonies that have good prolific queens just because they are two years old." Is that still his view? ONTARIO.

ANSWER.—"A bird in the hand is worth two in the bush," and while requeening we may replace a prolific queen by one equally prolific, I have seen so many good queens prove good the third year that I prefer not to replace a first-class two-year old queen by one whose ability is unknown to me. The bees usually requeen in good time, if the matter is left to them. But with an inferior queen or one just fair, requeening is necessary.—C. P. D.

Requeening

1. Is a table cloth an advantage on frames; if so, state what months to keep it on in Ontario?

2 Colonies with one, two or three cells of European foul brood, say first of June, and if I kill the queen the last half of clover flow and let these bees rear their own queen, will this cure foul brood? If so, state time to do it. Clover flow from June 20 to July 20.

3. If hives are broodless and queenless by June 1, and if given a frame of eggs, larvæ, and sealed brood to rear a queen, will the queen be fairly good?

4. If I lift a frame of brood above queen-excluder, will the bees start queen-cells; then when queen is hatched take off excluder? Will the young queen go down and kill the old queen? ONTARIO.

ANSWERS.—1. You probably mean enameled cloth or oil-cloth. I used such coverings at one time, but have not had any for years, having nothing between top-bars and flat covers, except when supers are on. I think they are not in use nearly so much as formerly. If you use such coverings at all, you will use them at any and all times except when supers are on, and may even use them over supers.

2. A cure would be likely to follow. Better not wait until the last half of the flow, as the case would be getting worse all the time, but act at the beginning of the flow. But if only two or three diseased cells are present, and the queen is good, all you need do is to cage her in the hive for 10 days.

3. Young bees are the ones to rear a good queen, and in the case you mention there are probably few or no young bees, so the resulting queen would not be likely to be very good. The best thing to do with such a colony is to break it up and unite with another colony or with other colonies. If you haven't the heart to do that, then a better way than the one you mention is to give your queenless colony the queen of some other colony, and let that other colony rear its own queen.

4. The bees are not at all certain to start cells over an excluder, and if they do, when you take away the excluder the young queen is likely to be killed if the old queen is a good one.

Large Hives

To prevent swarming why don't they use a larger hive than they do? They say a colony swarms because they haven't room to work; also the queen runs out of comb to lay in. OREGON.

ANSWERS.—"Why don't they?" They do. Ask Dadant & Sons, and you'll find they use hives much larger than most others. And, as you say, they have comparatively little swarming. Like enough they think the reason why all others do not use such large hives is because all others do not know enough; but they're a rather modest lot and wouldn't say such a thing out loud. But there are some who, no doubt, like myself, would use a larger hive than they now have if they were to start afresh, but when one has a full stock of hives on hand, it is not easy to make a change. However, the Dadants have nothing on me as to size of hives after all. Up to the time of putting on supers this year, I had 16-frame hives; that is, I had two stories of 8 frames each. No, indeed, I'm not going to be outdone by any lot of Frenchmen in the way of being liberal in giving room to bees.

Stopping a Swarm—Best Breeders—Price of Bees

1. Is there any way to stop a swarm of bees that are passing by you going to the woods; if so, how?

2. Which are the best bees to breed from, Italians, Carniolans, or others?

3. What is the difference between an untested queen and a breeder?

4. What are common bees worth in old box hives? Arkansas.

Answers.—1. Some have reported success by flashing upon the swarm the reflected rays of the sun by means of a looking-glass. Perhaps the most reliable thing is to throw upon the bees a strong spray of water.

2. Some prefer one, some another, but the majority prefer Italians.

3. When applied to Italians, a tested queen is one old enough to have produced workers, and those workers show that the queen is pure and purely mated by having three yellow bands. A breeder is a queen supposed to be exceptionally good, so as to be a desirable queen to breed from. You can call your best queen your breeder, and she may or may not be a very superior queen.

4. There is no standard as to the price In different places they may be worth $2.00 or less, up to $5.00 or more.

Emptying Out Partly-Filled Frames

What is the best I can do with frames partly-filled with honey; that is, not "ripe?" Would you put them on hives to be finished up, or let the bees clean them out in the fall, if they will, or what would you do? Pennsylvania.

Answer.—If you put those partly-filled frames over hives in fall to be emptied out, the bees may or may not empty them. If you expose them in the open they will assuredly empty them promptly; but they will also tear to pieces the tender new comb. You may avoid this by covering them up and allowing entrance for only one bee at a time. A good way is to mass them on one hive—now and not "later"—then when they are filled and sealed extract, or else keep them for the bees next spring.

After-Swarms—When to Prevent Swarming

In one way I understand that a new queen on emerging goes about and kills or destroys all other queen-cells or emerging queens; but then this seems to me not to tally with what is said in this connection with after-swarms. In the latter, one queen takes off a swarm, then a later queen takes a second one, and so on. Now, if the first queen really did settle all about other cells and queens, how could there be after-swarms?

2. When one examines a colony and finds queen-cells, how can one satisfy himself as to whether the latter are of a colony that has already swarmed or that the colony is preparing to swarm? I meet with cases in which it seems to me that there are lots of bees, so I feel non-plussed to recognize whether I should treat such colony to prevent swarming or not. Pennsylvania.

Answers.—1. When a young queen emerges from her cell, her first care, under any and all circumstances, seems to be to kill all rivals in their cells, and this she does by digging into the side of the cell. So strong is this destructive feeling in her, that a good many times I have known a young queen in a nursery, where she could get at no other queen-cell, to dig a hole in the side of her own cell after emerging from it. If matters were left entirely to her there would be no after-swarming. But the workers have the deciding vote, and if they decide there shall be an after-swarm they stand guard over the cells and will not allow the young queen to destroy them. Then it looks a little as if the queen said, "Well, if I can't get rid of these hated rivals, at any rate I won't stay in the hive with them," and off she goes with a swarm. As soon as the swarm leaves, generally all guarding of the cells ceases, all the virgins sufficiently mature emerge from their cells, fight until only one is left, and she is allowed to destroy all remaining cells. If, however, the bees decide upon further swarming after the first after-swarm, only one queen is allowed to emerge, and she goes off with a swarm, and this may be repeated until the last swarm issues.

2. It is not always easy to decide whether a swarm has issued or not. If you find sealed cells, brood in all stages, and eggs, and then succeed in finding the old queen, you may be sure there has been no swarming, unless it be that a swarm has issued and returned, which may happen if the queen is clipped or unable to fly. If you do not find the queen, then you can only guess by the number of bees present. If there are no eggs, then the chances are that the colony swarmed three days or more ago.

Robbing—Feeding Weak Colonies—Swarming When There Is No Honey to Gather

1. If bees begin robbing a hive can it be stopped, and how?

2. The honey-flow seems to be over here, and I have three weak colonies with very little comb, but nice good queens. How would you feed them so other bees would not get to the feed?

3. Would you put sugar syrup out in the open for all of the bees to eat, or would it have a bad influence on them working on the flowers later?

4. Will bees swarm when there is no honey to gather? Illinois.

Answers.—1. If bees have a good start at robbing a weak colony, it is a hard matter to stop them Perhaps the best thing is to take away the colony, putting it down cellar for two or three days, and put in place of the hive another hive like it, containing some comb and a little honey. (If you leave nothing for them to work at, they will attack one or more of the nearest colonies.) When they have cleaned out the little honey, and satisfied themselves there is no more to be had, they will quietly give it up. Then, after two or three days, return the colony to its place, closing the entrance to a very small space, perhaps allowing passage for only one or two bees at a time, and it may be that the robbers will not make another start, especially if a good queen is present. But if the colony is queenless, the case is rather hopeless.

Sometimes robbing has commenced at a fairly strong colony with a good queen. The first thing is to limit the entrance. Perhaps painting carbolic acid about the entrance will answer. A pretty good way is to pile hay or straw a foot deep in front of the entrance and keep it well wet with water.

Generally robbing is owing to some carelessness on the part of the beekeeper, and prevention is better than cure.

2. Use a Miller feeder in the evening after flight is over, and there will be no trouble. Other feeders can be used. If you happen to have none you can use a crock-and-plate feeder. Take a gallon crock, or some other size, put sugar in it, and an equal measure or weight of water, lay it over a piece of heavy woolen cloth or four or five thicknesses of cheese-cloth, and on this lay a plate upside down. With one hand under the bottom and the other on top, quickly turn the whole thing upside down, and your feeder is ready. Take the cover off your hive, set over it an empty hive-body, set your feeder in it and cover up, being sure that

Cozy Corner for a Retired Business Man—Italian Bees and Burbank Plums.
Chas. W. Brimhall.

all is bee-tight.

3. It will do no harm; only the bees that need most may get least.

4. Generally not; but sometimes they do foolish things.

In Preparation for Swarming Does the Queen Stop Laying?

In preparation for swarming, does the queen ever *entirely* shut down laying eggs, so that if no eggs can be noticed in the hive it invariably indicates queenlessness?

PENNSYLVANIA

ANSWER.—I think the queen continues to lay up to the day the swarm issues. But absence of eggs is by no means a sure sign of queenlessness. There may be no eggs, and even no unsealed brood, but a young queen which has not begun to lay.

Miscellaneous Questions

1. Please give me the addresses of every bee journal printed in English. I am now taking Gleanings in Bee Culture, American Bee Journal, and the Beekeepers' Review. Would you advise me to take more?

2. Where can I obtain new barrels for extracted honey? I cannot get them near here.

3. How many queen-cells may I give one strong colony to complete during a good flow, the colony being extra strong? I mean to get good queens.

4. If I give my bees the proper attention, which will give me the most money, comb honey at 20 cents a pound or extracted at 10 cents?

5. How can I tell a pure bred Italian queen? I notice all the queens I buy, and also the drones, vary in markings

6. Are Cyprian queens more prolific than other races?

7. Will keeping two or more laying queens in the same brood-chamber prevent swarming?

8. I have been trying your plan as given in "Forty Years Among the Bees," to prevent swarming by caging the queen 10 days, then destroy all cells and release her. They swarm next day in nearly every case after releasing the queen. What will prevent this?

9. Will bees start queen-cells below the excluder as often as they will above?

10. What are bees doing when they run around among other bees shaking themselves, appearing to be very happy about something?

VIRGINIA.

ANSWERS.—1. The British Bee Journal is published at 23 Bedford St., London, W. C. England The Beekeepers' Record is published at the same address. By getting a sample copy you can judge better than I whether it is desirable for you.

2. I don't know. Tin cans are used almost entirely for extracted honey in quantity.

3. Some limit the number to 10. But as a colony left to itself rears twice that number very often, it is doubtful whether it is necessary to limit the number so much. Indeed, it is possible that you will do no harm to give quite a large number, say as many as 40; the bees themselves will do the limiting by destroying the excess.

4. Comb.

5. The workers should show not less than three yellow bands. But you may find in a colony of pure Italians black workers that have come from other hives. Look for the downy little chaps that are quite young; amongst them there should be none without the three bands.

6. I don't think they have that reputation.

7. No.

8. I don't have much trouble in that way, and I don't know how to prevent it in your case. So far this year I have mostly followed that "put up" plan, varied a little. When a colony swarms, or I think it is in danger of swarming, two or more frames of brood and bees, with the queen, are put in a hive and one or two empty brood-combs or frames of foundation are added. A dummy is put beside the frames left in the old hive after all queen-cells in it are killed. The unoccupied space in the hive is left entirely vacant, the supers are put back on it, and the cover is put on. The hive with the queen is now put on top of all As this hive with the queen has its own bottom-board and is set on the cover of the old hive, of course there is no communication between the two. No attention is paid to any cells that may be in the "put-up" hive; the bees themselves will destroy them. Ten days later all cells in the lower hive are killed, and the queen with her frames of brood is returned. She was merely caged for two days and then freed.

9. I think they will, but I never tried it enough to know. In neither case can you be sure of cells being started at all.

10. I could never tell what it meant; although, as you say, they seem so happy that I enjoy seeing them thus waltzing.

Claiming Swarms—Clipping Queens

1. Do you have any claim to a swarm of bees after they cluster in a neighbor's yard, and how should I go about getting them if they tell me to leave them alone, as they want to keep them? Here is a little experience I had the other day. A large swarm came out about 1:30 p m. The queen was clipped first of April, so I did not worry when they commenced to get up in the air; pretty soon they began to cluster on a small apple tree in a neighbor's yard about a block away. I threw a little water on them and went home after a box to carry them in, and when I started to get them the people told me to let them alone as they wanted to keep them. I offered them 50 cents and then $1.00 to let me keep them, but nothing doing. They hived them late in the evening in two large cracker boxes and set them on the west side of the house in the hot sun. Next day the bees left them. The question is did I have a right to go into their yard to get my property?

2. Do you think there is any danger of my bees contracting disease by building my weak colonies with bees out of bee trees in the woods? I find a great many bee trees in the woods, and can use the bees to good advantage in building up weak colonies if there is not too much danger. I had a queenless colony this spring, and went to the woods and cut a bee tree, got bees and queen, brought them home and put them in the queenless colony the first of April, and on May 27 this colony swarmed.

3. How often does a person have to look over the bees to be sure the queens are all clipped? I clipped my queens early in April. Swarm No. 1 came out and settled on a grapevine in the yard. I could not find the queen anywhere on the ground, so I hived them and found a queen with two whole wings. Swarm No. 2 was the same thing. Swarm No. 3 came out May 31 about 9:30 a m., and clustered about 8 feet high on an apple tree. I got my hive and step-ladder and proceeded to hive them. I had about two-thirds of them in the hive and heard a roar, and another swarm was coming out of the hive next to No. 3, and the next thing I knew they were starting to cluster with No. 3. I shook the rest of the bees in No. 3 on the run board, and set the hive to one side in the shade. I went to look for the queen in front of No. 4, and could not find her. By this time swarm No. 4 was returning, and about half of them went into their own hive and half into hive where No. 3 had just issued. They did not fight any, and were soon quiet, and gave me a chance to look for the queen. I went through No. 4 hive and found some queen-cells but no queen closed up in the hive, and commenced looking on the ground. I saw about a dozen bees sitting on a brick, and found my clipped queen in the bunch, so I returned her to the hive. What do you suppose became of the other three queens I had clipped? I am sure I did not injure them, as I did not handle them; just raised their wings and clipped them off.

MISSOURI.

ANSWERS.—1. Laws may differ in different States, but in general the law is so long as you keep a swarm in sight you may claim it as yours, and wherever it alights you may go and take it, only you must pay for any damage you do in capturing the swarm. For instance, if you should cut down a tree or a limb to a valuable tree, you must pay for the damage done.

2. Yes, bees may be diseased in trees as well as hives.

3. The number of times it is necessary to look whether a clipped queen has been exchanged for another depends upon many circumstances too numerous to be detailed here. In general it may be said that there is no need to look until the queen is more than a year old so long as the colony does not swarm. Yet there are exceptions even to this.

It is possible that the loss of those clipped queens may have occurred in this way: The colony may have swarmed without being observed, and then the queen was lost, or else the bees balled her, and then a week or so later a swarm issued with the first virgin emerging.

REPORTS AND EXPERIENCES

A Handy Magnet

I have for years used a magnet to clean up my workbench, as with it I can find the smallest brads, screws and nails, as well as nail sets, big nails, crate staples, flat springs, and even a stray file. I thought may be others would like to know it.

The honey flow is on here in great shape, and I have all but one colony ready. Swarming has begun with others I raise brood, *a la* Demaree, and look for no swarms. I use *very* free ventilation and give *lots* of room.

A. F. BONNEY.

Buck Grove, Iowa, June 5.

Report from an Iowa Inspector

There has been more calls for inspection work in the southeast quarter of the State of Iowa than ever before. In Iowa county, where the most work has been done, every colony in the town of Williamsburg for at least 2 miles around was diseased with either American or European foulbrood or sacbrood. In a few cases two of these diseases were found to exist in one colony. European foulbrood has been showing up in a great many new localities.

The honey-flow has been from light to fair in most localities visited. The linden trees are in full bloom now, and the bees are storing fast from this source The recent rains will prolong the white clover flow well on into July.

J. W. STINE

Salem, Iowa, June 23.

Little Honey in Illinois

We have been having a few little showers so the crops are growing good. There will be no white honey in Illinois from a line drawn across the State from Princeton, Bureau county. From Princeton north there will be some white clover.

I am not looking for much fall honey except on the river bottoms.

A. L. KILDOW.

Putnam, Ill., June 30.

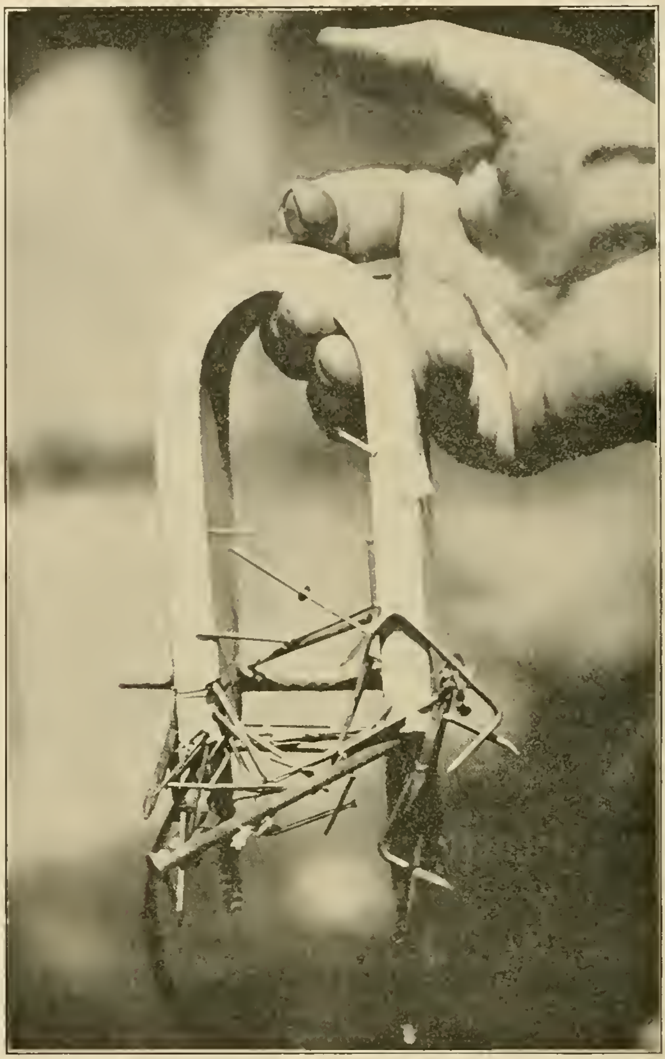
Keeping Bees in Attics

Mr. Editor, I am glad you have made mention of keeping bees in attics or garrets, for a better understanding of it. What you refer to is where inexperienced persons have, at the beginning of winter, put one or more swarms of bees in an upper room or garret. The first warm spell that comes they fly out and go to the windows and die. One of my neighbors used up two fine colonies in this way. The varying temperature does not seem to have much effect on bees, as we have had them for years in the hottest attics on earth; one in particular that seemed as hot as an oven. I feared the combs would melt down, but they never did, and last year, although so dry, they gave 50 pounds of comb honey.

But I would not advise putting bees in attics or lofts if you can build a suitable building of the size required in your yard, as it is much more convenient than going up and down stairs. But in the cities this is the only way, as bees placed anywhere above the second floor do not trouble anything on the ground, and it seems to be a great source of pleasure as well as profit to the city dwellers to have bees in their homes.

We set them by the wall and cut a good fly hole, or if we put them at a window we cut the fly hole through the bottom sash bar, and in addition make an opening at the bottom of the glass for the escape of any bees that might get inside. We darken all the other windows. J. A PEARCE.

Grand Rapids, Mich.



A MAGNET IS A VERY HANDY THING TO CLEAN UP THE WORK BENCH.

A Little from Basswood

There will be no honey here this year. White clover has all dried up, and basswood is yielding very little now. I hope the bees will gather enough to keep them.

Marceline, Mo., June 20. IRVING LONG.

No Surplus

No honey so far, and poor outlook at present on account of drouth. Very little surplus last year. FRANK L. GOSS.

Harwood, Mo., June 27.

Poor Season in Missouri

The season of 1914 is one of the poorest in many years thus far, with but little chance of anything to come. No white clover, and basswood did not yield any surplus. Bees are gathering just about enough from sweet clover to live on. They are killing off their drones at a lively rate. A. A. BALDWIN.

Independence, Mo., June 27.

A Month Late

We are a month late in extracting, but are making it up, as alfalfa is only $4.00 and $5.00 a ton here, and the farmers are neglecting to cut hay when it comes in bloom. Today the thermometer registered 115 degrees in the shade, and I am fearing a rain, which always stops our flow for a couple of weeks.

Brawley, Calif. ROY F. BATEMAN.

Crop Failure

The crop here is an absolute failure; no rain since May 4, and much of the vegetation has died outright. We need rain very badly. Hope you have fared much better.

W. E. DRANE.

Mallory Branch, Memphis, Tenn.

Good Report

We secured a big crop of honey, and were glad when the harvest ended. It is the whitest I ever saw. C. W. DAYTON.

Owensmouth, Calif., July 8.

Not Many Bees

A good honey flow has been on since about July 1, but bees were not in condition to make the most of it. A. E. BURDICK.

Sunnyside, Wash., July 13.

No Crop, But Enthusiastic

This has been a very poor year for bees; so far too dry. We haven't had an inch of rain since April 9 Have not taken a pound of honey, and no prospect of any. I hope they will gather enough for winter.

My wife and I have the bee fever badly, and hope next year will be better. We live in the city and keep nine colonies on a 40-foot lot and have no trouble. Last year I was away from home when our bees swarmed, and my wife had never seen bees hived, but had heard me tell how to do it, so she went after them. They had clustered in a small peach tree. She got a step-ladder and saw; sawed them out and hived them. She never got a sting, much to the surprise of the neighbor women.

GROVER E. MOORE.

Decatur, Ill., June 29.

Two Plants Described

I am sending by parcels post today samples of two plants I am unable to indentify. Will you kindly tell me about them through the American Bee Journal, as they may be of interest to others also.

The plant with the burs blooms just after dandelion, and the bees work on it in preference to everything else when it first comes. The clover-like plant is more of a vine, and comes from a crown and runs one or two feet in all directions. Is it of any value as a honey plant?

Princeton, Ill. G. R. RICHARDSON.

The samples being referrrd to Mr. John H. Lovell, he states:

The smaller plant with clover-like leaves and small yellow flowers is *Medicago lupulina L.* Common names are black or hop medic, black seed clover, black trefoil, black grass, and also non-such. It belongs to the same genus as alfalfa. The species is introduced from Europe, and is a well-known weed.

The other plant with the burs and small purplish flowers is *Cynoglossum officinale L.* Hound's-tongue and gypsy flower. It is a weed, naturalized from Europe, and is found between Canada, North Carolina, and Kansas. The fruit has the form of a pyramid, and is composed of four nutlets covered with barbed prickles. Each nutlet has the form of a tongue, hence the name hound's-tongue.

Letter from Natal

Do black and silver wattles (acacia) secrete much nectar; if so, what is the color produced and flavor, and *do they give much surplus*, if any?

The enclosed specimen of a flower grows in profusion on prickly bushes, which have filled our grass lands around here. They appear to be too deep for our bees to extract nectar from, as one rarely sees more than one or two bees on a bush, which must have thousands of flowers. Do you think Italian bees could work on these? I know that they secrete nectar, because when one pulls the flowers and squeezes them, you can see big drops of nectar at the end. Local name tinkerberry; Latin name unknown.

We have the bush flowers all the year around, and it is very hard to exterminate them.

I am given to understand that eucalyptus (gum tree) flowers the whole year around; is that so? A. NILES.

Natal, South Africa.

[The name "wattles," which our correspondent uses to designate the acacias in question, is special to South Africa and Australia, and probably describes trees or shrubs which differ from our locusts. We have in the United States both the thorny locust (*Gleditsia*) and the black locust or false acacia (*Robinia*). Both are good honey yielders, but the former is rare. The *Robinia*, or common locust, yields excellent honey between fruit bloom and clover bloom. But in very few localities it is in sufficient quantity to yield a surplus. In Italy, it is used for hedges, and we were informed that it makes large quantities of very white honey.

The blossoms which our Natal friend sent us appear to have a corolla similar to that of red clover. Perhaps some others of our South African subscribers may enlighten us as to the name of the bush.

The eucalyptus or blue gum is also an Australian tree, but is much grown in California. Our Californian correspondent, Mr. J. E. Pleasants, has already given us, in the July number, quite a little information concerning the eucalyptus, and he promises additional information, before long, on this subject.

Classified Department

(Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Phelps' Golden Italian Queens will please you.

For Sale—Untested Golden Italian Queens 60c each. J. F. Michael, Winchester, Ind.

Bees and Queens from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

Golden all-over Queens. Untested, $1.00. Tested, $3 00. Breeders, $5.00 and $10.
2Atf Robert Inghram, Sycamore, Pa.

For Sale—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

Leather-Colored Italian Queens for sale. Send for price-list.
Geo. B. Howe, Black River, N. Y.

Pure Tunisian Queens, tested, $1.00; 2-lb. bees with tested queen, $4 00. Safe arrival guaranteed. Lenoel, Nabeul, Tunis.

Untested Queens, 75c each; $7 50 per doz. Nuclei $1 25 per frame. Bees, $1.50 per pound. Full colonies, 8-frame, $6.50; 10-frame, $7.50.
Stover Apiaries, Mayhew, Miss.

For Sale—Fine Italian Queens. See my large ad. in this issue.
J. F. Archdekin, Rt. 7, St. Joseph, Mo.

Italian Queens for sale. Untesed, 90 cts; six for $4.75. All queens are reared from my imported mother. Jul. Buegeler,
Rt. 1, New Ulm, Tex.

1914 Queens—Moore's strain of leather-colored Italians In April at 75c. Bees by the pound and Tested queens. Write us for prices on nuclei. Address,
Ogden Bee & Honey Co., Ogden, Utah.

Choice Italian Queens—Hardy, gentle, white cappers, 3-banded, hustlers. Untested 75c each, six for $4.00. Select untested, $1.00; six for $5.00. Tested, $1 50.
A. J Seavey, Farmington, Maine.

Queens, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

Queens—10 percent discount for orders received before May 1, to be filled in May and June. Tested, $1.00; untested 75c. Dead ones replaced free. 2A9t
S. Click, Rt. 2, Box 16, Mt. Jackson, Va

We Will be in the field with good Italian Queens in June for $1.00 each; 6 for $5 00. Two-frame nuclei in June without queen, $2 50; with queen, $1.00 extra
D. J Blocher, Pearl City, Ill.

Northern-reared Queens of Moore's strain of leather-colored three-banded Italians. After June 15, untested, $1.00; 6 for $5 00; 12 for $9.00.
Ramer & Gluen, Harmony, Minn.

Phelps' Golden Italian Bees are hustlers.

Italian Queens, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or $7 25 per dozen. Safe arrival guaranteed.
W. W. Talley, Queen Breeder,
3Atf Rt. 4, Greenville, Ala.

For Sale—1913 hatch sel. tested, Aug. $1 00 each; Sept., 75c each as long as they last; wish to replace with 1914 for 1915 sales. Will sell a good breeder for $1 50.
E. E. Mott, Glenwood, Mich.

High Grade Queens by return mail. Tested, $1 25; warranted, 75c each; choice breeding queens, $2 50 each. Italian Carniolan or Caucasian. Virgins of any of the above strain, 3 for $1 00. Stanley & Finch,
1451 Ogden Ave, Chicago, Ill.

Three-Banded and Golden Italian queens. Ready March 1. They have been bred for three points, prolificness, gentleness and honey-gathering qualities. Prices, Select Untested, 75c each; 6, $4.25; 12, $8 25; 50, $32 50; 100, $60. Tested, $1 50; Select Tested, $2.00.
Garden City Apiary Co.,
R. R. 3, Box 86, San Jose, Calif.

California Italian Queens, Goldens and Three-banders by return mail. Select untested, one, $1.00; 3, $2.50; 12, $8.00. Tested, $1.25. Bees by the pound a specialty. One 1-lb., $1.25; one 2-lb, $2.25. Safe arrival and satisfaction guaranteed. Correspondence invited; circular free. J E. Wing,
155 Schiele Ave., San Jose, Calif.

Reduced Prices for August and September. Untested queens of my 3-banded Italian stock One for 70 cts; 6 for $3 90; 12 or more at 60 cts. apiece. No disease and no better queens at any price. Full colonies and several apiaries for sale.
H. D Murry, Mathis, Tex.

Pure Golden Queens, the best that twelve years can produce. Untested, $1.50 each, Select tested, $3.00 each. Breeders, $5.00 to $50. Send for booklet on "Bees and Diseases." Geo. M. Steele,
30 South 40th St., Philadelphia, Penna.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

The Bankston Bees and Queens are as good as the best. Golden, Three-band and Carniolan. Tested, $1.00 each; untested, 75c. Queens ready to ship April 15. Bees, per pound, $1 50. Nuclei, per frame, $1.50. Write us for prices on large lots of queens. Try us and be pleased.
Bankston & Lyon, Box 141, Buffalo, Tex.

Golden and 3 banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $2.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1 50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

For Sale.—Three-banded Italian Queens, bred from the best honey-gathering strains, that are also hardy and gentle. Untested queens, 75c; six, $4 25; 12, $8.00. Tested, $1.25; 6, $7.00; 12, $12. For select queens, add 25c each to above prices Breeding queens, $3.00 to $5.00 each. For queens in larger quantities write for prices. Robt B Spicer,
Wharton, N. J.

Dunn's Golden Italian queens, bred strictly for business that produce a strong race of honey gatherers. March 1 to Oct. 15. One, mated, 75c; 6, $4.25; 12, $8.25; 50, $32. 50; 100, $60. L. J. Dunn, Queen Breeder,
2A9t Box 337 G, R. R. 6, San Jose, Calif.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3 00; Breeders, $5.00 and $10 C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

Quirin's Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G Quirin,
The Queen Breeder, Bellevue, Ohio.

For Sale—We offer our best Italian bees in 10-frame hives, from one to carload f. o. b here, or in yards of 100 or more complete with fixtures and location. Cash on reasonable time. If preferred, will rent on shares several years with privilege to buy. Particulars on request. Spencer Apiaries Co.,
Nordhoff, Calif.

Queens by return mail or your money back. Guaranteed purely mated. J. E. Hand strain of 3-banded Italians Bred for gentleness, honey gathering and wintering. State inspector's certificate. Select untested, one, 75c; six, $4.00; 12, $7.00. Tested, one, $1 00; six, $5.00; 12, $9.00; Select tested, one, $1 25; six, $7.00; 12, $13 Breeders, $4.00 each. Write for price on large orders. Safe delivery and satisfaction guaranteed in U. S. and Canada. Ten percent discount on 30 days' advance orders. Reference, First National Bank. J. M. Gingerich, Arthur, Ill

HONEY AND BEESWAX

"Null's Famous Melilotus Honey." Sample for stamp. Null Co., Demopolis, Ala

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale—Orange honey in 60-lb. cans, 2 in a case, at 9c per pound. Sample free
James McKee, Riverside, Calif

For Sale—No 1 white comb, $3 00 per case; fancy, $3.25; 24 Danz. sec. to case, and 6 case to carrier. Wiley A. Latshaw, Carlisle, Ind.

For Sale—Light Amber Extracted Alfalfa Honey of excellent quality, by car lots in new 5-gal. cans. Can also take care of smaller orders. Address,
Roy F. Bateman,
R. R. No. 2, Box 15, Brawley, Calif.

The Beekeepers' Review is now owned and published by the honey producers themselves It is *the* paper *all* honey producers should support. Eight months' trial subscription, beginning with the May number, for only 50c. Sample copy free. Address, The Beekeepers' Review, Northstar, Mich.

SUPPLIES.

Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

Better Hives for Less Money—Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

The A. I. Root Company's Canadian House. Dadant's Foundation. Poultry, Supplies, Seeds. Write for catalog.
The Chas. E. Hopper Co.,
185 Wright Ave., Toronto, Ont.

MISCELLANEOUS

Original and unique honey advertising post cards (photos). Write Dr. Bonney, Buck Grove, Iowa, for samples.

American Bee Journal

I GOT 100 pounds of comb honey per colony; my neighbors got none. I'll tell you how for 25c. O. N. Baldwin, Baxter, Kan.

MAKE paint without oil cheaply. Best known for bee-hives, barns, coops, etc. Formula, 15c. I. Holmberg, El Dorado Springs, Mo.

I WILL show any bee man who can raise about four thousand dollars, how to live and grow richer every year without hard labor. Write me. John M. Morgan, Ordway, Colo.

YOU have been thinking for some time you would like to become a National Beekeepers' Association member. Now is your time; a year's dues to the National and eight months' subscription to our own paper, the Beekeepers' Review, beginning with the May number, both for only a dollar. Address with remittance, The Beekeepers' Review, Northstar, Mich.

POULTRY

FOR SALE—Single Comb Buff Orpington eggs for hatching, pure bloods; $1.00 per 15 or $5 00 per hundred. Satisfaction Guaranteed. W. H. Payne, Hamilton, Ill.

FOR SALE

FOR SALE—Having sold my farm, I now offer for sale 50 colonies of bees in 10-frame hives, with or without supers or supplies. No foulbrood. C. S. Russell, Pine City, Minn.

WANTED

WANTED—To buy a yard of bees in New York State, in good location. Mention full particulars, style of hives, etc. Post Office Box 57, Mahwah, N. J.

CASH PAID FOR HONEY

We are constantly in receipt of inquiries for prices on honey. When you are ready to market your honey, you will find an army of purchasers ready to buy it by advertising your product in the Woman's National Weekly, which reaches 200,000 homes every week. Write for our Special Classified rates and free sample copy. **Dept. O C, Woman's National Weekly, University City, St Louis.**

SPECIAL OFFER

Will sell 300 choice tested Italian Queens at 85c each. These are the very best queens in our 3 apiaries, and will guarantee every queen to give entire satisfaction. If not satisfied within one year we will refund your money.

FRED LEININGER & SON
Delphos, Ohio

EASTERN BEEKEEPERS

This is the season when you will need bees or supplies. Our catalog, which is free, will show you how to save money. We have a large stock and can ship promptly.

Italian queens, $1.10.

I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

ITALIAN BEES

Choice Home-bred Queens Reared In strong colonies.

Prices for July & After

Untested Queen, .. .90
One Tested Queen....$1.30
" Select Tested 1 60
" Breeder............ 2 45
" Comb Nucleus—no Queen............ .90
½ lb. bees............ .90
" " 1.75

Safe arrival guaranteed.

For description of each grade of queens send for FREE catalog

J. L. STRONG,
Clarinda, - - Iowa

ITALIAN QUEENS

Untested queens, 75c each; 6 queens, $3.75. Tested queens, 90c each. Six queens, $4.50.

JOHN LEININGER
Ft. Jennings, Ohio

ITALIAN QUEENS NORTHERN BRED

Superior winterers, second to none. My free list explains it all. Untested, 75c for Aug. and Sept. Select tested, $1.50. Bees by the pound or half pound. Plans, "How to Introduce Queens," 15 cents, "How to Increase," 15 cents; both, 25 cents.

E. E. MOTT, Glenwood, Mich.

ARCHDEKIN'S FINE ITALIAN QUEENS

Three-banded. Bred for persistent profitable production of honey. Prolific, hardy, gentle. The bee for pleasure or profit. One customer says, "Your queen soon had her 10 frames running over with bees that are hustlers. No disease. Satisfaction guaranteed. Orders filled promptly. Ready May 20.

Untested, $1.00 each; 3 for 2.75; 6 for $5.00; doz., $9.00. Select tested, $2 each.

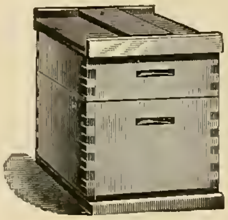
J. F. Archdekin, R. R. 7, St. Joseph, Mo.

Idaho and Oregan Report.—Throughout southern Idaho we had a very early spring; general conditions were perfect. On June 6 we had a very bad freeze, requiring considerable feeding in some cases where bees previous to the freeze had too much honey for proper brood-rearing. Ideal weather has since brought these conditions back considerably but not enough, for we are not going to have more than two-thirds of a crop in general, unless we have a late fall, which is rare here. There is a large portion of Idaho where the freeze did not hit that will have a good average crop.

Word received from eastern Oregon today informs me that a bad hail storm has about knocked their prospects in the head; they also had a frost in June

M. A. GILL, JR.

Hagerman, Idaho, July 20.



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29 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.

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SHIPPING CASES - SPECIAL DEAL

SINGLE DECK—24 section, 2-inch glass shipping cases, special price. Write us!

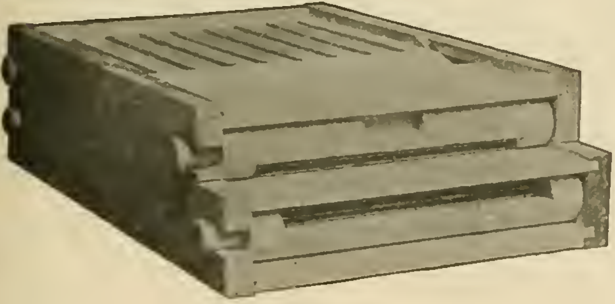
Ship us your old combs and cappings. It means more wax and money for you.

We buy honey for cash. Write us what you have to sell.

THE FRED W. MUTH CO.,
"The Busy Bee Men"
204 Walnut St., Cincinnati, Ohio

FEATURES OF ADVANTAGE OF THE

ROLLER ENTRANCE BOTTOM BOARD



1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.

2. It controls the mating of the queen so that mismating is prevented.

3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position

4. It sifts automatically undesirable drones out of the hive, and cages them in the drone trap.

5. It permits ample ventilation at the height of the honey-flow.

6. It can be instantly closed when moving bees in and out of cellars or from one yard to another.

7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.

8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.

9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.

10. It is adjustable to make a shallow bottom for summer and a deep one for winter

It contains many other valuable features which will be apparent to any beekeeper upon investigation, and if it is once tried it will always be used.

8-frame size, $2.00; 10-frame size, $2.50. Italian Queens, Breeders, $10 to $25.

Nothing sold under $10.

CHAS. G. SCHAMU

INVENTOR AND MANUFACTURER Box 48, LIVERPOOL, NEW YORK

TENNESSEE-BRED QUEENS

42 years' experience in queen-rearing—Breed 3-band Italians only

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	$1 50	$ 7.50	$13.50	$1.25	$ 6 50	$11.50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4 00	$ 7.50
Select Untested	2.00	8.50	15 00	1.50	7.50	13 50	1 25	6.50	12.00	1.00	5.00	9.00
Tested	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested	3.00	16 50	30.00	2.75	15.00	27.00	2 50	13.50	25.00	2.00	10.00	18.00

Capacity of yard 5000 queens a year—Select Queen tested for breeding, $5

The very best Queen tested for breeding, $10. 300 fall reared tested Queens ready to mail, $2.50 to $10 each.

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed.

John M. Davis, Spring Hill, Tenn.

"Griggs Saves You Freight" TOLEDO "Griggs Saves You Freight"

With four carloads of new goods on hand, we are now better prepard for the rush than ever. But don't wait to be in the **rush**. Send your order in now and have the goods on hand, ready for use.

NEW ILLUSTRATED CATALOG OF 60 PAGES

We want one in every beekeepers' hands. Send postal for one today. It is free.

WHITE CLOVER EXTRACTED HONEY WANTED—ALSO BEESWAX

In exchange for supplies. It will be to your interest to get in touch and keep in touch with us.

S. J. GRIGGS & CO., 24 N. Erie St., TOLEDO, OHIO

"GRIGGS IS ALWAYS ON THE JOB."

NEW ENGLAND BEE KEEPERS

Everything in Supplies
New Goods. Factory Prices
Save Freight and Express Charges
CULL & WILLIAMS CO.
Providence, R. I.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

Bee-Supplies

LET US FIGURE WITH YOU

We know we can satisfy you on quality. Write for catalog.

C.C.CLEMONS BEE-SUPPLY CO.
Dept. S., Kansas City, Mo.

CARNIOLAN QUEENS

AFTER JULY 1

	1	6	12
Untested	$1.00	$5.50	$9.00

Tested, the same price.

Address, **WM. KERNAN,**
R. F. D. No. 2, - Dushore, Pa.

AMERICAN GOLDEN ALL-OVER QUEENS
P. E. SHIDER
Swarthmore
PENNA. U.S.A.

Am Now Shipping Untested Queens from My

CELEBRATED PEDIGREED STRAIN!

My bees are the product of many years of breeding by both Swarthmore and Henry Alley. Both names stand out like beacon lights among our past and present breeders, for the best queens ever produced in the United States. Never had foul brood.

SWARTHMORE APIARIES. - Swarthmore, Pa.

QUICK SHIPMENT OF QUEENS

of 3-band stock reared for honey gathering qualities

Untested, June, $1.00. Later, 75c Tested, $1.50. Select tested, $2.

Send your orders now and be assured of having queens when you want them. **R. A. SHULTS, Cosby, Tenn.**

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HONEY CANS

All Styles—All Sizes

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BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
"Pearce's Method of Beekeeping" (50c)	.30
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.30
Muth Bee-Veil (75c)	.60
Danzenbaker Bee-Smoker ($1.00)	.80
	$3.60

Or *all* the above in one order to one address *for only $3.00.* (The retail price of the bunch is $4.95.) Address,

GEORGE W. YORK, SANDPOINT, IDAHO

WANTED

Honey!

Extracted and Comb

Will buy or handle on Commission

Beeswax

Will Pay Highest Prices.

Yours very truly,

HILDRETH & SEGELKEN
265-267 Greenwich St., New York, N. Y.

Three-Band Italian Queens For 1914

I will again have for sale, after April 1st, young queens reared from my best Leather-Colored Breeders. You will make sure of improving your stock and securing a crop of honey if you introduce some of these queens. The Leather-Colored Italians are recommended and used by the largest and most progressive bee-men of today.

Untested, $1.00 each; $9.00 per doz., $75 per hundred. Select Tested, $1.50 each.

C. S. ENGLE, Beeville, Bee Co., Texas

SUPERIOR

GOLDEN QUEENS

Untested, $1.00; 6, $5.00; 12, $9. Select Untested, $1.25; 6, $6, 12, $10. Prices on application for tested and untested queens by the hundred. Address,

T. S. HALL, Talking Rock, Ga.

BINDER ATTACHMENT with corn harvester cuts and throws in piles on harvester in winrows. Man and horse cut and shock equal with a corn binder. Sold in every State. Price only $20 00 with fodder binder. J. D. Borne, Haswell, Colo., writes: **"Your corn harvester is all you claim for it; cut, tied and shocked 65 acres milo, cane and corn last year."** Testimonials and catalog free, showing pictures of harvester. Address.

PROCESS MANF. CO., Salina, Kansas.

Queens of Quality

3-band leather color. Unt., 60c each; $7 00 per doz. Sel. Unt., 75c each; $8.00 per doz. Circular free. **J. I. BANKS, Liberty, Tenn**

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BEE-KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

Beekeepers' Supplies and Fruit Packages

We manufacture the famous Sheboygan Hive, which always gives absolute satisfaction. Our perfect sections, made from selected white basswood, are recognized as the best on the market.
Catalog now ready for distribution. Write for copy.

SHEBOYGAN FRUIT BOX COMPANY, Sheboygan, Wisconsin

Dittmer's Foundation

Is the **Comb Foundation** made to **suit the Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

Ask for more information; also prices and **FULL DISCOUNT** on all Bee-Supplies.

Gus Dittmer Company
Augusta, Wisconsin

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Manufacturers
OF THE
"NONE BETTER"
BEE-KEEPERS' SUPPLIES

Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping-Cases, Brood-Frames, Separators, etc.
We invite your correspondence.

Guarantee — All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

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New London, Wis.

PHARR WANTS YOUR ORDERS FOR QUEENS

Goldens and 3-Banded Italians

For twelve years we have asked for your orders and we have gotten all we could fill and sometimes more. But we have ever tried to serve you right, and will guarantee similar treatment in the future. Prices of Untested, $1.00; Tested, $1.50; Breeders, 3.00 to $5.00. Write for prices in large quantities.

2-frame Nuclei, queenless,	$2.25	All
3 " " "	3.25	F. O. B.
10 " colonies with queen	8.00	Berclair.

Orders booked now—delivery last of May or June

John W. Pharr, Berclair, Texas

Try My Bright ITALIAN QUEENS

This is what one customer writes:—

JOSEPHINE, TEX., June 16, 1913.
MR. M. BATES, Greenville, Ala.
Dear Sir:—I am sending you $9.00 for which please send me 12 Untested Golden Italian Queens. The queens you sent me are fine, and old bee rearers say they are the finest they ever saw. They have surely made a reputation here for you. Several men say they will order queens soon.
A. M. MORRISON.

I have other letters that say the same. Selected Untested, each 60c; Tested, each $1.25; 2-frame nuclei, each $2.50. I guarantee safe arrival and perfect satisfaction.

M. BATES, Route 4, Greenville, Ala.

CARNIOLAN QUEENS

Carniolans are excellent winterers, build up rapidly in the spring, are very gentle, very prolific, cap their combs very white, enter supers readily, and keep their colonies strong at all times. Write for our **free** paper, "Superiority of the Carniolan Bee," explaining more fully, giving briefly best systems of management. Untested queens, $1.00 each; doz., $9.00. One-lb. package bees without queen, $1.50; with queen, $2.50, in June.

ALBERT G. HANN, Clinton, New Jersey
Carniolan Queen-Breeder.

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-Page Catalog

Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

C. H. W. WEBER & CO.

CINCINNATI, 2146 Central Avenue, OHIO

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

WE MAKE IT GOOD

THE BEES MAKE IT FAMOUS

The Reputation of

DADANT'S FOUNDATION

Has been built on its merit

It is a Favorite with Beekeepers

BECAUSE

It is so well liked by the BEES

Whether it's a pound or whether it's a ton, every sheet is PERFECT

Satisfaction Guaranteed in Every Way

DADANT & SONS,

HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

SEPTEMBER 1914

Mass Agl College apr 10
Library Amherst, Mass

Beekeepers in Attendance at the Mt. Pleasant, Iowa, Field Meet, July 28

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec14" on your label shows that it is paid to the end of December, 1914.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 5 lines accepted.

DISCOUNTS:

3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 23d of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD

Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913

Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.
STILLWATER, Oct 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.

(Signed) PROF. E. C. SANBORN,
State Entomologist.

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n
ANTHONY BIAGGI,
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

ITALIAN QUEENS NORTHERN BRED

Superior winterers, second to none. My free list explains it all. Untested, 75c for Aug. and Sept. Select tested, $1.50. Bees by the pound or half pound. Plans, "How to Introduce Queens," 15 cents, "How to Increase," 15 cents; both, 25 cents.

E. E. MOTT, Glenwood, Mich.

FEATURES OF ADVANTAGE OF THE

ROLLER ENTRANCE BOTTOM BOARD

1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.
2. It controls the mating of the queen so that mismating is prevented.
3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position.
4. It sifts automatically undesirable drones out of the hive, and cages them in the drone trap.
5. It permits ample ventilation at the height of the honey-flow.
6. It can be instantly closed when moving bees in and out of cellars or from one yard to another.
7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.
8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.
9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.
10. It is adjustable to make a shallow bottom for summer and a deep one for winter.

It contains many other valuable features which will be apparent to any beekeeper upon investigation, and if it is once tried it will always be used.

8-frame size, $2.00; 10-frame size, $2.50. Italian Queens, Breeders, $10 to $25.

Nothing sold under $10.

CHAS. G. SCHAMU
INVENTOR AND MANUFACTURER Box 48, **LIVERPOOL, NEW YORK**

SHIPPING CASES

SPECIFICATIONS

One-piece cover, bottom and back, one-fourth inch thick and smooth on both sides.

Ends one-half inch thick, smooth on both sides and hand-holed.

Glass rails three-eights inch thick, smooth on both sides.

Lumber free from rot, shake, and loose or rough knots.

Corrugated straw board in the bottom and paper covering on top. Where can you find a better case?

One-piece cover and bottom makes a much better and stronger case than a pieced cover or bottom.

Our shipping cases must be seen to be appreciated.

Why do you pay more money for an inferior article? Get our prices and save money.

MINNESOTA BEE SUPPLY CO. 100 Nicollet Island
Minneapolis, Minn.

Manufacturers of Dovetail Hives, Sections, Hoffman Frames, Etc.

QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate. Purest of the pure

GREY CAUCASIANS

Bred strictly in the light of **Mendel's Laws of Heredity**; no guess, but positive results. The pioneer **scientific** queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special **isolated mating station** on bald open prairie, not a tree within miles—no chance for gypsy drones.

CHAS. W. QUINN
Box 389 - Beaumont, Texas

LARGEST, BEST

and most complete line of Bee and Poultry Supplies ever seen in Illinois at the lowest living prices. Satisfaction guaranteed or money refunded. Established in 1899 Send for our new catalog. Let us hear from you.

H. S. DUBY & SON, St. Anne, Ill.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

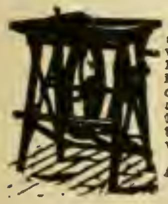
FROFALCON QUEENS

Everything for the beekeeper. Address.

J. C. Frohliger, Berkeley, Calif.
Greater San Francisco

Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery



Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 60 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES
995 Ruby St., Rockford, Ill.

Please mention Am. Bee Journal when writing.

Try My Famous Queens

From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

Bred in Separate Yards

Untested, one, 75c; 6, $4.25; 12, $7.50; 25 14 25; 100, $50. Tested, one, $1 50; six, $8.00; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

QUEENS of MOORE'S STRAIN of ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide, reputation for honey gathering, hardiness, gentleness, etc.

Untested queens, $1.00; six, $5.00; 12, $9.00.
Select untested, $1.25; six, $6.00; 12, $11.00
Safe arrival and satisfaction guaranteed.

Circular free. **J. P. MOORE,**
Queen-breeder **Route 1, Morgan, Ky**

Fine Italian Queens Warranted

Tested, 75c each in quantities to suit you. No culls. Queens strictly A No. 1, reared from select honey gatherers and mated to select drones. These are equal to queens that sold for $1.00 to $1 25 earlier in the season. Will sell for 75c each while they last. Give me a trial order. No disease.

CHAS. M. DARROW
Star Route, Milo, Mo.

Bingham Bee Smoker

NEW BINGHAM
BEE SMOKER
Patented

Nearly Forty Years On the Market

The original bee smoker was invented and patented by Mr. T. F. Bingham in 1878, 1882, 1892 and 1903. The Bingham Smoker is up to date, and the standard in this and many foreign countries. It has recently been improved, and is the all-important tool of the most extensive honey producers of the world. No other invention in apiculture has been so important, as little could be accomplished without the bee smoker. For sale direct or at your dealers. Postage extra.

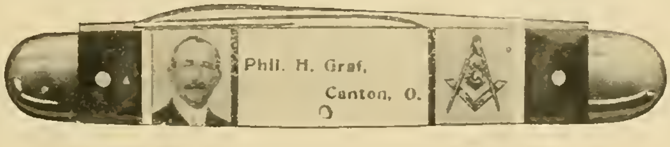
Smoke Engine	4	inch	stove,	Weight	1¾	pounds,	$1 25
Doctor	3½	"	"	"	1⅝	"	.85
Conqueror	3	"	"	"	1½	"	.75
Little Wonder	2½	"	"	"	1	"	.50

Two Largest Sizes With Hinged Cover

A. G. WOODMAN COMPANY

Grand Rapids, Michigan

BEE-KEEPER'S NOVELTY POCKET-KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size. We have succeeded in getting this knife made in lots from genuine car-van steel. It is especially well tempered and keeps its edge remarkably. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

We Make a Specialty of

Manufacturing SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

QUICK SHIPMENT OF QUEENS

of 3-band stock reared for honey gathering qualities
Untested, June, $1.00. Later, 75c
Tested, $1.50. Select tested, $2.
Send your orders now and be assured of having queens when you want them. **R. A. SHULTS, Cosby, Tenn.**

CAUCASIANS and CARNIOLANS

I was the first to import each of these races from its native land; 31 years' experience with Carniolans; 12 with Caucasians Untested queens, $1 00; five for $4.00. Tested, $2 00 each.

FRANK BENTON,
P. O. Box 17, Washington, D. C.

"Falcon" QUEENS

Three-band and Golden Italians, Caucasians and Carniolans

Untested, July 1st to Oct. 1st, one, $ .85; six, $4.50; twelve, $ 8.50
SELECT Untested, July 1st to Oct. 1st, one, 1.00; six, 5.50; twelve. 10.00
Tested, $1.50 each. Select tested, 2 00.

All queens are reared in strong and vigorous colonies, and mated from populous nuclei.
Instructions for introducing are to be found on the reverse side of the cage cover.
A full line of bee supplies and foundation manufactured by us at Falconer, N. Y.
Write for samples of our foundation and Red Catalog, postpaid.

WESTERN DISTRIBUTERS:—C. C. Clemons, Bee Supply Co., 128-130 Grand Ave., Kansas City, Missouri

OTHER DEALERS EVERYWHERE

Red Catalog, postpaid **"Simplified Beekeeping," postpaid**

W. T. FALCONER MFG. CO., - FALCONER N. Y.

Where the good bee hives come from

HONEY LABELS

Owing to the many enquiries we have had for Honey Labels, we have put in a line of these for the convenience of our readers.

Send for catalog, giving samples of labels with postpaid prices. We also list **Envelopes and printed Letter Heads.**

American Bee Journal, Hamilton, Illinois.

SPECIAL OFFER

Will sell 300 choice tested Italian Queens at 85c each. These are the very best queens in our 3 apiaries, and will guarantee every queen to give entire satisfaction. If not satisfied within one year we will refund your money.

FRED LEININGER & SON
Delphos, Ohio

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years. In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority.

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL—Breeding.—Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

HONEY AND BEESWAX

CHICAGO, Aug. 18.—Comb honey of this year's make is coming on the market, and best grades command 15c per pound. A little fancy clover in small cases sold at 16c. Amber grades sell at from 1@5c per pound less, according to kind, condition and color.

Extracted, white, ranges from 7@9c; the white clovers bringing highest price. Ambers, 6@8c; all lots being governed by kind, condition and quality Beeswax sells upon arrival at 35c. R. A. BURNETT & CO.

LOS ANGELES, Aug. 17.—The supply of honey in California is considerably in excess of the demand, which has been extremely light this season. The average prices received for honey so far this year have been about 1c per pound less than were received last year, but this has not resulted in a larger amount of business. Price on wax has dropped 2 or 3c per pound since the keen demand for foundation purposes has ceased. We quote the market on honey in carload lots for eastern shipment about as follows: Fancy water-white sage honey, 7¼c; light amber sage, 5½c; light amber alfalfa, 5c, HAMILTON & MENDERSON.

CINCINNATI, Aug. 13.—The demand for honey is very light. Some new shipments of comb and extracted honey arriving, but it is an effort to make sales. For choice and No. 1 comb honey in no-drip shipping cases we are getting $3.75 to $4.00 per case, and 8@9c a pound for white extracted honey, and 5@7c a pound for amber extracted, in barrels according to quantity and quality. For choice bright yellow beeswax we are paying 30c a pound; must be free from dirt.

THE FRED W. MUTH CO.

INDIANAPOLIS, Aug. 14.—Very little honey is moving. Much comb has been carried over from last year. The demand is good for extracted, but as yet no prices are established. Producers of beeswax are being paid 32c cash, and slightly higher when goods are taken in payment.

WALTER S POUDER.

KANSAS CITY, MO., Aug. 13.—New comb honey is making its appearance in our market. The demand is still light, on account of the hot weather. Receipts of extracted are fairly large, and the demand is exceedingly light. We quote No. 1 comb, 24-sections to the case, $3.25 to $3.35; No. 2, $3.00; No. 1 amber, $3.00 to $3.25; No. 2, $2.50 to $2.75 No. 1 extracted, per pound, 7½@8c; amber, 7@7½c; dark, 5c. Beeswax, No. 1 at 28c, and No. 2 at 25c per pound.

C. C. CLEMONS PRODUCE COMPANY.

BOSTON, Aug. 17.—No. 1 and fancy new white comb, 16@17c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c. BLAKE,-LEE COMPANY.

SAN FRANCISCO, Aug. 20.—Comb honey is not being offered, and the little that is taken up at 16c for fancy. Water-white extracted, 7@7½c; amber, 5@6½c; dark, 4@4½c. Little or no demand. Beeswax, 30c for light, 24@26c for dark. JOHN C. FROHLIGER.

DENVER, Aug. 15.—We have no more old stock of comb honey to offer. We are selling extracted in a jobbing way at the following prices: White extracted, 8c; light amber, 7c. We pay 32c per pound in cash and 43c in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

NEW YORK, Aug. 14.—It is too early to say now what the new crop of comb honey in the East will amount to, and while all reports point to a short yield, in New York State in particular, the far West will have more that enough to offset the shortage in the East There are no prices established as yet.

The market for extracted honey is decidedly dull, and buyers are afraid to contract for large quantities fearing that the European war will have a tendency to lower prices, which, we believe, is true, as all the West India honey, Cuban in particular, 90 percent of which has heretofore been sent to Europe, will naturally be dumped on the United States market, there being no shipping facilities to Europe. The market being in such an unsettled condition we cannot ourselves name any prices at present.

HILDRETH & SEGELKEN,

TENNESSEE-BRED QUEENS
42 years' experience in queen-rearing—Breed 3-band Italians only

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested.........	$1.50	$ 7.50	$13.50	$1.25	$ 6 50	$11.50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select Untested	2.00	8.50	15 00	1.50	7.50	13 50	1 25	6.50	12.00	1.00	5.00	9.00
Tested............	2.50	13.50	25.00	2.00	10.50	18.50	1 75	0.00	17.00	1.50	8.00	15.00
Select Tested....	3.00	16 50	30 00	2.75	15.00	27.00	2 50	13.50	25.00	2.00	10.00	18.00

Capacity of yard 5000 queens a year—Select Queen tested for breeding, $5
The very best Queen tested for breeding, $10. 300 fall reared tested Queens ready to mail, $2.50 to $10 each.
Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed.
John M. Davis, Spring Hill, Tenn.

Miller's Strain Italian Queens
By **return** mail or money refunded. Bred from best **RED CLOVER STRAINS** in the United States. In full colonies, from my **SUPERIOR BREEDERS,** northern bred for business; long tongued; leather color or three-banded; gentle; winter well; hustlers; not inclined to swarm; roll honey in- Untested, 1, 75c; 6, $4.00; 12, $7.50. Select untested, one, $1.00; 6, $5.00; 12, $9.00. A specialist of 17 years' experience. Safe arrival and satisfaction guaranteed.
I. F. MILLER, - BROOKVILLE, PA

"Scientific Queen-Rearing"
No other book compares with this one written by Mr. G. M. Doolittle. He is an expert in the business. It tells just how the very best queens can be reared. Bound in cloth. By mail, $1.00; or with the American Bee Journal, one year—both for $1.60. In leatherette binding, 75 cents, postpaid; or with the American Bee Journal one year—both for $1.25. Send to the American Bee Journal

When You Need Queens
We will be pleased to fill your order. Our business of rearing queens was established in 1886. We know what it means to have a good strain of bees and queens that stands second to none. Three-band Italians only—bred for business and free from disease. Tested, $1.00 each. Untested, 75c; $7 00 a do
J. W. K. SHAW & CO., Loreauville, La.

PONTIAC ENGRAVING CO.
ARTISTS
ENGRAVERS-ELECTROTYPERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

"NUTMEG" ITALIAN QUEENS
By return mail.
AFTER June 1st untested $1.00
April & May queens tested $2.00
A. W. YATES
3 CHAPMAN ST
HARTFORD, CONN.
Write for prices by the hundred.

FARM FENCE
41 INCHES HIGH
21 CENTS A ROD
100 other styles of Farm, Poultry and Lawn Fencing direct from factory at save-the-dealer's-profit-prices. Our large catalog is free.
KITSELMAN BROS. Box 85 Muncie, Ind

NEW ENGLAND BEE KEEPERS
Everything in Supplies
New Goods. Factory Prices
Save Freight and Express Charges
CULL & WILLIAMS CO.
Providence, R. I.

These Experts Have a Hand in All the Lewis Beeware You Buy

IS THIS WORTH ANYTHING TO YOU?

When you consider buying Bee Supplies, ask yourself these questions:

Where can I buy (not the most) the best for my money?
What kind of material will I get?
What sort of workmanship will be furnished?
How will these gooods be packed?
Who are making and standing back of these goods?
What are their facilities for distribution?

HERE IS THE ANSWER:

The G. B. Lewis Company has been in the business of manufacturing bee supplies for forty-one years. It has grown from a carpenter shop to a plant covering nearly six acres of ground, with an annual output of 30,000,000 sections and 100,000 hives. During all the years, in the face of advancing prices on material and labor, the scarcity of suitable lumber, competition of cheaper and inferior goods, it has had many opportunities to cheapen its product at the expense of quality. **But it has steadfastly stood by its guns, maintaining one standard of quality and workmanship. LEWIS BEEWARE** is the same today, was the same yesterday, and will be the same tomorrow.

Now, what about the workmanship in these goods? What skill do they represent? In a word, what is their personality? The business has been under one management, and the lumber has been bought by one buyer for twenty years. He is still managing the business and buying the lumber. The head mechanic came into the factory when a boy. He has been supervising for thirty-six years. The Bee-hive superintendent has been devoting his life to making Bee-hives for thirty years. The Section boss has been watching the Lewis Section machinery and output for twenty-nine years. These men represent the skill, the brains and the conscience that go in the goods. We ask you again—**DOES THIS MEAN ANYTHING TO YOU?**

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G. B. LEWIS COMPANY

Manufacturers of Lewis Beeware

Watertown, Wisconsin, U. S. A.

AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879)

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

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EDITORIAL COMMENTS

Caring for Super Combs

Under this title, our practical and able Canadian correspondent, Mr. Byer, favors leaving piles of supers in the yard during the summer, to have the spiders protect them against the moths. However well it may succeed in Ontario, it has been a failure with us. The least little crack in which the moth may be able to lay its eggs is sufficient to insure a big crop of fat worms on the inside.

We prefer to keep the empty comb supers in the honey house, using either sulphur fumes or a rag dipped in bisulphide of carbon, from time to time. If the bee-house is allowed to become as cold as possible during our cold winters, little is to be feared from the moths unless the combs have been exposed outside afterwards.

"A Modern Bee Farm"

We are in receipt of a copy of the 5th edition of this work, by Samuel Simmins. This author, living in Sussex, England, is well known to many of our readers, for he is the writer of several works on the bee, the most prominent of which is probably his "Non-Swarming System," 1886, which is embodied in the present work. This contains 479 pages and 15 plates.

Space forbids our going into details concerning the book. We wish, however, to take notice of one or two statements. Mr. Simmins concurs with Dr. Carton (A. B. J., April, page 127) in the assertion that "the presence of foulbrood in a hive is an evidence of low vitality." He asserts that "the spores of foulbrood need not be dreaded, as they may be destroyed by a most simple and efficacious process, which is that of causing them to germinate where such germs find no congenial soil; as also where a suitable antiseptic then immediately acts upon the successive germs so that they have no power of reproduction, or of maintaining their own existence."

His method is to keep the colony queenless until all diseased brood has been cleaned out and treating it with "Izal solution." As Mr. Simmins does not seem to differentiate between American and European foulbrood, we wonder whether the numerous cures he reports did not refer to the latter. Izal is also recommended by him for Isle of Wight disease, besides changing queens and adding healthy brood.

As the word "Izal" is not found in any dictionary or encyclopedia that we possess, or even in the United States Dispensatory, we took the trouble of writing Mr. Simmins to enquire about it. We were then informed that "Izal is a disinfectant, an emulsion of izal oil—obtained in the coking of coal in especially constructed coke ovens, at a low temperature with a certain proportion of air." It is a British proprietary drug, also kept for sale in the United States.

Regarding Isle of Wight disease, Mr· Simmins makes the assertion that it is not a disease of the bowel, because it is generally found only in the adult workers and in neither the queen nor the drones. He calls it "infectious paralysis." He asserts it can be cured and gives his methods.

In the British Bee Journal of July 16, page 286, in a reply made by the editor to a correspondent who claims to have cured this malady, the editor replies: "At present there is no known cure for Isle of Wight disease." Who is right?

Were it not that Mr. Simmins is an old and experienced apiarist, we should have hesitated to mention these statements, especially as we have very little faith in the value of any disinfectant for brood diseases. But it is the function of a bee journal to bring these matters before the public. "A Modern Bee Farm" is worthy of a place on our shelves, even if Mr. Simmins' cure methods should not prove sufficient in all cases.

The Temperature of the Colony

Bulletin No. 96, of the Department of Agriculture, with the above title, is before us. It is the account of a study, made in 1908, by Prof. Burton N. Gates, now President of the National Association, at that time Apicultural Assistant at the Washington Bureau of Entomology.

This account gives not only the different temperatures recorded on a colony of bees at different seasons of the year, it also gives the amount consumed by a colony during winter, from day to day. The colony which served for the experiment consumed 11 pounds of honey in four months, November to February inclusive. The daily average was 43.5 grams, or nearly 1½ ounces. An interesting fact is that at three different dates in November the colony gained instead of losing. The gain, which was of 20 to 40 grams, was evidently due to the gathering of moisture, for the weather was damp. This confirms the experience of old apiarists, that combs of honey, when they become cold, act as a pitcher of cold water in a warm and damp atmosphere, and condense the moisture.

The temperature of the cluster in cold weather is variously reported at from 68 to 91 degrees F., while in the active breeding season it fluctuates between 93 and 95 degrees.

The report contains several interesting experiments such as the effects of storm and wind on the temperature of the colony, the effect of transportation in warm weather, of disturbance by the apiarist in winter days, of the flight of the young bees (play flights) on sunny days, etc. It is worthy of careful study. It may be obtained from the Department of Agriculture in the usual way.

Bulletins for Beekeepers

"Honey Bees as Pollenizers," by Mrs. Susan M. Howard, and "Soft Candy for Bees," by Prof. Burton N. Gates, President of the National Association, are both published by the State Board of Agriculture of Massachusetts, and we are kindly informed by Prof. Gates that they may be had by our readers if applied for. Address him at Amherst, Mass.

We have also received Bulletin No. 3, on "Brood Diseases of Bees," by the Iowa State Inspector, Mr. Frank C. Pellett, of Atlantic, Iowa. The bulletin may be had from the inspector above named.

San Francisco in 1915?

According to a report just received, already 237 national and international congresses and conventions have chosen San Francisco for their meeting place in 1915. We see no reason why the National Beekeepers' Association should not help swell the list.

Invitations have been extended by the management of the Exposition, by the California Association, and many beekeepers have in personal letters expressed the hope that San Francisco would be chosen.

H. W. Hechler in His Apiary at Hedrick, Iowa

Diseases of the Adult Bee

In our editorial upon "A Modern Bee Farm," we have said that Mr. Simmins calls the Isle of Wight disease "infectious paralysis." We have for a long time thought that this disease was the same as our "paralysis" or the "May disease" of Europe, characterized by the appearance in great numbers of the *Nosema apis* of Zander. But now come additional descriptions of various diseases, of the same nature. In the May and June numbers of "Le Rucher Belge," Mr. Bage describes not only the *Nosema apis* of Zander and the *Bacillus gaytoni* of Cheshire, but several forms of "dysentery" or "refertum," which are called "refertum pollinis, refertum viscini, refertum dextrini, refertum nutriciæ," besides artificial poisoning and natural poisoning. However, "dysentery" should not be described as "refertum," for the latter word is Latin, and means "full, fullness." The fullness of the bowels in these cases is rather constipation than dysentery. But if only half of those diseases are specific and distinct, we are on the way to much valuable information.

We wrote to Europe for greater light upon the subject, but the present unfortunate war conditions are absorbing the attention of our friends across the Atlantic. Our sympathy goes to them. Nations need to do away with czars, kaisers and emperors. We have a few jingoes in America, but they would never lead us into such insanities as the present European war.

Apiary of E. T. Carlson at Aledo, Ill.

Humble Bees in New Zealand

Bulletin No. 46 (New Series), of the New Zealand Department of Agriculture, is just at hand. It contains 30 pages with illustrations, and has for its subject, "History of the Humble Bee in New Zealand." Our old friend, Mr. Isaac Hopkins, for many years government apiarist in that country, is the author. Mr. Hopkins is an authority on this subject as well as on the honey bee. He was among the first to import humble-bees into New Zealand

Previous to 1870, the farmers of New Zealand were able to get but little seed from red clover, owing to the absence of this bee. Such seed as was set, Mr. Hopkins states, was due to the presence of the honey-bee. In 1872-73, several importations were made but with little success, and it was not until 1884-85 that the first humble bees were successfully introduced. Their propagation was rapid. Within a year some of these bees were reported as far as 100 miles from the place where the first ones had been liberated.

The increase in amount of seed harvested from the red clover increased in direct proportion to the number of humble-bees, until at present large quantities of seed are harvested. Such was the case also with a few different grasses which had been difficult of propagation previously.

Mr. Hopkins believes that it is advisable to make further importations of several species of humble-bees which are not yet found in this country in the hopes that they will be better able to stand the climate of certain portions where red clover is little grown for seed at present, owing to the absence of this insect.

In the course of the booklet, life history of the humble-bee is given with a description of the queen, size of colonies, method of hibernation, disease germs, etc.

The appendix contains remarks by Mr. W. W. Smith, F. E. S., and also has a description on each specie of the humble-bee.

The bulletin, 2000 copies of which were printed in March, 1914, makes very interesting reading. Its illustrations are excellent, and Mr. Hopkins writes in his usual easy style which is in itself an attraction.

Sweet Clover Again

The case of sweet clover has been given another boost, before the public, by Prof. Mosier, of the Illinois State Agricultural Experiment Station, at the Chautauqua of Hamilton, on Aug. 15. Not only he said that sweet clover was a far better legume to enrich soil than any other legume, but he reported that he had planted last fall 55 acres of red clover and 6 acres of sweet clover. Owing to the drouth, the red clover was about all killed out, while the sweet clover had yielded a crop of four and four-tenths tons of hay per acre. He also averred that sweet clover is almost as good hay as alfalfa.

MISCELLANEOUS NEWS ITEMS

Albino Queens.—Mr. Alfred Alex, of Yorktown, Tex., is desirous of obtaining the names of breeders handling Albino stock. Any one having such stock should correspond with Mr. Alex.

◆

Winter in New Zealand.—The last issue of the New Zealand Farmer contains a half-page picture of the beekeepers in attendance at the National Conference in Wellington recently. Their represention is fine. We were struck by the picture in that nearly all the members wore overcoats, until we recalled that the seasons there are just the reverse of what we have here. The honey producer is at his busiest there when we of the North are taking things quietly and profiting by spare moments to catch up with our reading.

◆

Louisiana Association Formed.—Louisiana is going to be placed in the front rank of honey producing States if the plans of an organization formed in Shreveport are developed as expected by members of the organization, which is to be known as the Louisiana State Beekeepers' Association.

Twenty or more persons engaged in this industry attended the organization meeting, which was held at the Chamber of Commerce headquarters. Several of them made talks, in which they declared that this section of the country was well adapted to bee culture, as shown by results that have been obtained by those in the business.

In different parts of the State there are beekeepers, and it is thought that the membership can be increased to 100 without much difficulty. Efforts to well the list will be made promptly.

Officers of the association for the first year were chosen. President, G. F. Pease; vice president, W. S. Carney; secretary-treasurer, L. T. Rogers.

◆

Maasachusetta Field Day.—One of the biggest joint annual field day meetings of the Worcester County Beekeepers' Association and Eastern Massachusetts Society of Beekeepers in the history of the county took place at the home of O. F. Fuller, president of the former organization and prominent queen-breeder in Blackstone, on Aug. 8.

Mr. Ellsworth spoke of the progress that has been made in the apiary inspection work.

Dr. Gates spoke of the plan of the Massachusetts Agricultural College whereby it will be possible to demonstrate the fundamental principles of beekeeping at the large fairs in Massachusetts this fall. Arrangements have been completed to attend the Fitchburg fair, the New England fair at Worcester, the Brockton fair, and the fair at Northampton in October.

At each of these will be an extensive equipment, consisting of a demonstration tent, supplied with a work bench and display tables, and a cage in which demonstrations of handling bees will be made, together with a small model apiary. The display will also include the most recently approved methods used in beekeeping. Demonstrations will be given daily by various authorities. This is probably the first attempt to promote apiculture through the medium of agricultural fairs.

Arthur C. Miller, of Providence, R. I., spoke briefly concerning the development of his method of direct introduction of queens through the use of smoke.

A. W. Yates, of Hartford, bee inspector for Connecticut, and queen-breeder, demonstrated in detail his type of "let-alone" hive. This is a modification and development of the smaller hive of Allen Latham, of Norwich, Conn.

E. M. F. Tittle, of Woonsocket, gave an interesting address concerning beekeeping in early days. This was an historical account of beekeeping from

DISTANT VIEW OF THE MASSACHUSETTS AGRICULTURAL COLLEGE APICULTURAL BUILDING AND EXPERIMENTAL APIARY.

John L. Byard in the Experimental Apiary.

the Greco-Roman period to the modern times.

There were numerous displays by beekeepers, especially by Ross Bros., of Worcester, who had a well-selected assortment of beekeepers' implements, including hives, smokers, and other tools of the business.

Mr. Earl M. Nichols, of Lyonsville, queen-breeder, also had a display. Mr. Nichols had specimens of queen-bees in their mailing cages.

At the demand of the beekeepers, Dr. Yates and Dr. John I. Baird, a former inspector, but now superintendent of apiaries at the Massachusetts Agricultural College, demonstrated the procedure in treating bees for infectious diseases.

O. F. Fuller also demonstrated his method of queen rearing, which is markedly different from the commercial methods. By this method Mr. Fuller has been able to secure queens when others fail, especially late in the season. In his specially constructed hives he has kept drones as late as January.

◆

Bees Attack Dr. Bonney.—While Dr. Bonney, of Buck Grove, Iowa, was taking down a decoy hive full of bees last evening (June 20), Master Claude Welch came to assist him, when the bees attacked the lad. The Doctor, to save the boy, took his veil off and put it over the boy's head, when the angry insects assaulted the Doctor. The Doctor wears but few clothes in warm weather, and the bees found many vulnerable points. However, 50 or 60 stings do not bother him much, and he went on with his work.—*Ex.*

Concerning this accident Dr. Bonney writes:

I send this only because there was no swelling on my face, neck and arms, and possibly I have discovered something.

I was stung 10 or 50 times; a few more or less do not figure. Twice over one eye, once on the nose, twice on the cheek, and once on the chin. By this time I got my handkerchief over my head, then picked up a dozen or so on the neck and where my chest was exposed, also on the arms.

Getting away from the bees I went to the yard with the decoy hive, and going into the honey house began to look for something to stop the hurting, for it did hurt like the very devil. Spying a bottle of 40 percent solution of formaldehyde I applied that, only because it was the only thing in sight save some denatured alcohol.

Did the formaldehyde prevent the swelling? Try it?

◆

BeeKeepers' Field Day.—The beekeepers of northern Illinois and southern Wisconsin will hold a Field Day at Black Hawk Park, Rockford, Ill., on Wednesday, Sept. 9. C. P. Dadant, editor of the American Bee Journal, A. L. Kildow, State Inspector of Illinois, and if possible N. E. France, State Inspector of Wisconsin, will be present.

A colony of diseased bees will be shown and the disease discussed. Every beekeeper is cordially invited to attend this meeting. A profitable and enjoyable day is anticipated. A large attendance is expected.

A. L. Kildow,
State Inspector of Apiaries.

◆

The Des Moines Meet.—This convention was the fifth of a series of summer meetings being held throughout the State by the Iowa Beekeepers' Association. The event took place at the Dustman apiary, July 15, when an attendance of about 125 persons exchanged experiences.

The program was featured by practical bee talks by Frank C. Pellett, State Bee Inspector; Prof. Bartholomew, of the Iowa Agricultural College; Judge A. P. Chamberlain and Prof. C. H. Tye, of Des Moines, and by practical beekeepers.

Few beekeepers held out much hope for a good honey year this season, but the poor prospects did not seem to lessen their enthusiasm for keeping on in their work. Last year was exceptionally profitable in most sections, and they said it would make up for this year.

Mr. Tye spoke of the bee as an economic friend of man. Bees, he said, are one of the greatest agencies in transferring pollen from the male to the female flowers. The body of the bee is covered with fine, hair-like particles, and when the bee enters one flower to get nectar, these hairs collect pollen and leave it on and fertilize other flowers. Prof Tye said no section could be a good fruit country unless it had plenty of bees, making the bees useful and important not only for honey production, but for successful fruit growing.

An important point brought out by Mr. Tye was that fruit growers should be very careful in their spraying, to do it at a time when the bees are not working in the blossoms. He said the object of using poisons in the spray mixture was to kill insects, and that what would kill the harmful ones would be strong enough to kill the bees. To avoid killing the bees, the speaker recommended spraying before the blossoms appeared, and then delay the second spraying until after the fruit forms. This plan would be just as effective against the pests, and it would protect the bees which are so essential in fruit growing.

Foulbrood, which is putting so many beekeepers out of business, was the subject of the State Bee Inspector, Mr. Pellett. He mentioned three prominent bee diseases, sacbrood, American foulbrood and European foulbrood. The first is a very mild disease, and never causes very serious loss.

The only way to combat American foulbrood successfully is to melt up all the honey and wax, says Mr. Pellett. A light chocolate color in the larvæ makes the disease easy to recognize when it first breaks out. In the advanced stages the color becomes darker and resembles roasted coffee. The disease usually begins at about the time of capping. Decaying larvæ which have died have the odor of a poor quality of glue.

If European foulbrood is discovered in time, it need not be so serious as the American. Mr. Pellett said the best way to get after this is to kill the old queens and replace them with Italians, as they are more resistant to the disease. The European foulbrood seems to be an entirely different disease, and larvæ are attacked at an earlier stage than with the American. There is a small yellow spot on the body near the head of the larvæ when the disease first breaks out, and very few of the cells are capped. After death occurs the larvæ turn yellow, then brown, and finally almost black.

Marketing of honey was discussed by Mr. H. B. Miller, of Marshalltown. Although Mr. Miller has been in the bee business only a few years, he has built up a profitable market for his product.

The annual convention of the State association will be held at Ames Nov. 17, 18, and 19 in connection with a short course on apiculture. A feature will be a beehive products exhibit in which all beekeepers are invited to compete.—*Wallace's Farmer.*

◆

When the Trouble Started.—Slagg had lived all his life in the city. Never had he seen anything in the vegetable line except factory made grass until he decided to spend the summer working on Cousin Hiram's farm. Not knowing much in the way of driving a hoe or a harrow, the new farm hand was put to work whitewashing the outbuildings, while the rest of the staff took to the cornfields. When Cousin Hiram returned to the house at noon, Slagg was sitting on the woodpile looking as if he had been crawling on his face through 10 acres of sand burs.

"Give me my money, boss," said he in a mournful voice. "I'm going back to town."

"What have ye been doin' to yerself?" asked Cousin Hiram, wonderingly sizing up the new hand. "What's happened?"

"I don't know exactly what happened," was the dejected reply of Slagg, "but it started when I tried to whitewash that thing they call a beehive."—*Philadelphia Telegraph.*

◆

United States Statiatics.—The Year Book of the Department of Agriculture for 1913 shows importations of beeswax of 828,793 pounds at about 30,6 cents per pound. Exports of the same 116,296 pounds. The comb foundation exported evidently does not appear in this amount, for the price given of the beeswax exported is less than 30 cents per pound. Perhaps there is some error in the reckoning.

Honey exported amounts to $182,252, while the imports amount to only $68,717. The latter is inferior honey, for the price is a trifle less than 60 cents per gallon.

◆

The Field Day at St. Anne.—The picture sent under separate cover is a part of those present at the field meet of the Eastern Illinois Beekeepers' Association, which met at St. Anne, Ill., July 11, and was one of the best ever held in Illinois. Over 75 were present, and it was evident that the crowd would be too large to have all of them at one time in the yard at good advantage, so two groups were formed; the first with I. E Pyles, who took excessive pains to instruct his hearers.

The second group was under the care of A. L. Kildow, and was mostly ladies. Mr. Kildow was at his best, and astonished some of the ladies the way he handled "those bees," and "did not get a sting." Veils had been provided for the occasion, though the bees were very gentle and no one was stung.

After the demonstration the people went to the shady lawn where the two inspectors gave lectures to a very atentive audience.

After many thanks to H. S. Duby for his kindness in letting them have the use of his yard and disturbing "his bees," the meeting adjourned.

This was the 4th annual meeting held in St. Anne. These meetings are growing more and more interesting each year. H. S. Duby.

◆

The Mt. Pleasant Meeting.—Starting from our home at 5:30 on the morning of July 28, with an automobile, we reached Mt. Pleasant, Iowa, 50 miles away, at 8:10. Coming from the north, with his wife and daughters, Frank Coverdale living 118 miles away, started at 4 a.m., and reached the place of meeting a little before noon. In this day of speed, two farmers may leave their homes on the opposite edges of some of our great States, get together for a talk and go back home the same day, without having to bother with train schedules. What will it be when we succeed in building decent roads throughout the United States? These are needed, for a sudden rain puts an end to all the pleasure of such trips.

The meeting at Mt. Pleasant was only fairly attended when we compare it with previous meetings at other places. But it made up in enthusiasm what it lacked in numbers. The sessions were held in the ancient and dilapidated Court House of Henry county. A fine new Court House with modern conveniences is just completed, and will be in use soon.

We had the pleasure of meeting there one of our oldest practical men, J. A. Thomas, of Mt. Pleasant, whom I had met for the first time at a bee-

Bee Convention held at Mr H. S Dube's Apiary
July 11, 1914 St Anne Ills.
Photo by
Ed. Bernier St Anne Ills

Convention Group at the St. Anne, Ill., Field Meet, July 11, 1914 keepers' meeting at Burlington, Iowa, May 7, 1878, or 36 years ago.

In the absence of the secretary, Mr. L. W. Elmore was made secretary *pro tem.*

Frank Coverdale

The discussions included consideration of the Quinby *vs.* the Langstroth hive, by J. A. Thomas. The Quinby hive had more supporters, at this meeting, than usual, and a strong appeal was made in its favor. Then Mr. Pellett gave some views on the question of marketing and advertising the honey crop, saying that with a little money, judiciously spent, beekeepers could very much increase the demand for honey, making the price much more satisfactory.

Mrs. Coverdale

The qualities of the different races were thoroughly discussed, especially as regards their possible immunity from disease. The verdict was strongly in favor of the Italian race.

Organization among beekeepers was recommended in a paper by Mr. Baxter, with the greatest stress on State organizations, for both the purchase of supplies and the sale of the apiary products.

The *clou* of this meeting was the discussion of the growing of sweet clover, led by the king of sweet clover growers, Frank Coverdale, whose name ought to be "Cloverdale." Nothing new was brought forward, however, outside of the emphasis of the usefulness of sweet clover as a feeding crop, as a soil enricher and as a honey producer. This is being acknowledged on all sides, and sweet clover is coming into its own. Wherever it is grown largely there is very little chance of honey crop failures.

Leaving the place of meeting again at 5 p.m., we were home in time for supper. We use Ford automobiles. They are the cheapest and best for the money. Light cars are desirable for the farmer. I once owned an Overland. They are considered as good cars. Mine was a cripple, for I never went anywhere with it without having trouble. When I became tired of paying for repairs in every neighboring city garage, I wrote the company to complain. They promised to send a machinist to examine the car, but never did, so we finally traded it off for a little Ford, and we now have three of these in use.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

A Letter from New York

"In your 'Fifty Years Among the Bees' you wrote of a colony which did not swarm (the one in the four hive bodies with openings all the way up and at the top). Didn't the rain going in all those openings hurt them, or the brood and uncapped honey?

"The attached picture shows my one colony, kept for the joy of watching their ways. A year ago I bought four frames of Italian bees with an extra select tested queen which I found and clipped the next week, and they have not been cross in spite of my fussing with the shade boards and 'swatting' the hornets and bumble-bees that bother them. The bumble-bees bother them a great deal.

"This spring I saw a humming bird poke his bill in at the entrance. Evidently he did not reach any honey, for he has not been there again.

"The bottom-board was too tight to pry loose without disturbing them, but they have a full entrance (10-frame hive) with the other entrances front and back, but not at the top, two full bodies for the brood, three extracting supers (one with foundation, and the 10 drawn combs from last year divided between the other two), and at the top a comb-honey super which is partly drawn out. Surely, they have room enough and air enough; yet on a humid day there will be anywhere from 50 to 200 out on the platform. Do they always do that?

"My loose hanging frames hang on spaced metal rabbets, but I have cut down those spacing shoulders and put nails in the frames, '*a la* Miller,' and have spacing nails in my extracting frames the same way, using eight of these to a super; so much easier to handle.

"There has been a great growth of white clover here this year. I never saw so much before. We have had so much cool wet weather lately, but there seems to be a flow right along from something; they even work in the rain.

"This morning they were coming back to the hive at 4:30, and the last few returned at night around 7:45. Do all bees have as long a working day or are mine an exception?

"In August they are very busy on a plant called 'Joe Pye's weed;' then they have golden-rod, asters, and other fall flowers up on South Mountain, just west of us; so that they worked until the middle of October last year. This year they started the latter part of March, and early in April were working hard.

"I am sending you a picture of my winter case, which worked like a charm.

View Of Mrs. Sayers' Hive, Shade Board and Observation Seat

The back was fastened with hasps, so that it could be taken off after the cover was removed, and scoop out all the sawdust without disturbing the bees. The cover was painted canvas over wood, and had deep cleats inside which fitted down in the body so the wind could not lift it.

"Tar paper covered the wooden case, and the portico was made to shelter

Winter View of Mrs. Sayers' Single Colony

the entrance, but as you can see by the other picture, we had some very heavy snows this winter, so I laid a board against the portico, thus keeping the entrance dry. They had a great many flights and wintered well. I had a chaff tray over a Hill's device on the brood-chamber, and when I took it off April 24, they had built comb from the tops of frames to the Hill's device. Propolis is abundant in this locality, and they glue everything fast.

"The little stool shown in the picture is where I sit to watch them, and no matter how thick they are flying around, not one ever bothers me. Do you think they recognize the person who is around them so much?

"My shade board works well (the hive faces east and I use a second shade board at the south until the grapevines above them give more shade). We have a bamboo porch screen stretched on the arbor above them to help shade them, and when it rains too hard I put pieces of 'quarter round' over the extra openings on the rainy side.

"Your book has been a great help, and all beginners should have it. I also look for your articles and 'Answers' in my Bee Journals.

"(Mrs.) Grace A. M. Sayers.
"Nyack, N. Y."

The foregoing letter, with the beautiful pictures accompanying it, has been handed over by Dr. Miller for publication in this, its appropriate department, and the replies here given are in accordance with his views.

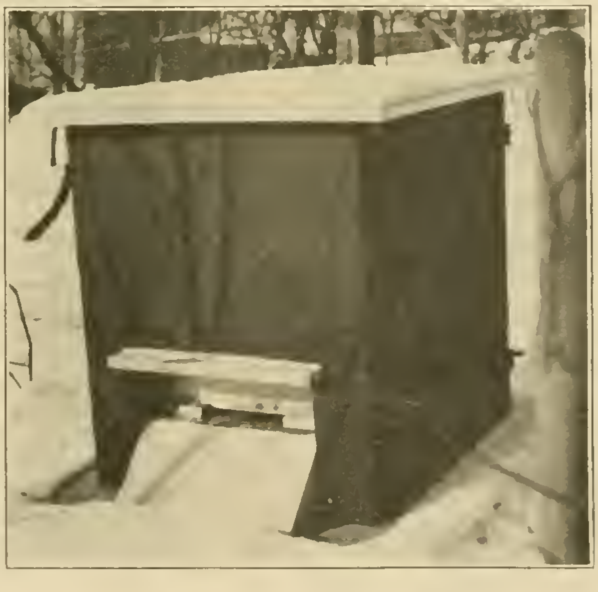
Those pictures are interesting subjects for study. One of them shows Mrs. Sayers' "apiary" almost covered with snow, in the center of the picture; another gives a nearer view to show the manner of its winter dress; while the third, exquisite gem that it is, shows the "apiary" in its coolest dress for hot weather. A close look at this third picture shows that the different stories are "stuttered;" that is, that they are shoved back and forth to admit ventilation. Some of us who have to work at the hives all day long in the sweltering heat can but envy Mrs. Sayers that shady seat on which to watch the bees and listen to their drowsy hum. Nothing drowsy about the bees, to be sure, but did you never notice a drowsy feeling coming over you if you sat for any length of time watching the bees and listening to their steady murmur? But why in the world was not Mrs. Sayers herself sitting on the seat when the picture was taken?

Mrs. Sayers raises the question that has probably troubled many another, as to whether in the "stuttered" pile the rain does not beat in through the openings and hurt the brood or uncapped honey. Well, we have had experience enough in the matter to be able to tell something about it. For a quarter of a century or more we have had one or more of such piles every year, and we have had much more experience in another way, for throughout most of the harvest on all hives having section supers an opening of a quarter of an inch or more has been allowed between the hive and the super at the back end. During all these years we have never noticed any harm from the rain entering these openings. If you will think about it you will see that the rain must be driven half an inch in a horizontal direction before it can touch the brood or honey. The most that probably happens is that a little clean water runs down at the ends of the frames, and in warm weather that can do no harm.

It will be interesting and instructive if Mrs. Sayers will report how that comb-honey super on top of the three extracting supers turns out. One would hardly expect very much work to be done in it until after the extracting supers are filled. To be sure, that would also be true of an extracting super on top; but the bees would be a good deal slower about working on foundation than on drawn combs. Of course, the sections being partly drawn out makes a difference.

Yes, Mrs. Sayers, on a humid day it is nothing strange to see many more than 50 to 200 bees outside the hive, especially after the day's work is over in the evening. Even with abundant ventilation it is more comfortable outside than in.

The question as to the length of a day's work for bees is not one to be answered in ten words. From 4:30 in the morning until 7:45 at night is certainly a long day's work, and is exceptional. There is a difference in bees as to industry, and your bees may be exceptional in that respect. You will no doubt find, too, that 15¼ hours is an exceptional day's work for your bees. There seems some irregularity about the working of the bees that is a bit puzzling. Under what seem to be the same conditions they work at some



The Single Colony Packed for Winter

times longer than at others. Sometimes they work as early and as late as the light will let them. The flow has much to do with it. So has the temperature. They will, of course, be slow about getting to work on a very cool morning. But sometimes, too, they are slow about getting out on a warm morning even in a good flow. It looks just a little as if they said to themselves: "We worked hard all day yesterday; we're tired, and we're entitled to a little extra rest this morning before starting out."

"Do bees recognize the person who is around them so much?" Likely not, Yet when placed where people are constantly near them, or passing by, they are less likely to be on the offensive or defensive than when seldom seeing any one. Yet such bees act just the same toward an entire stranger as toward their owner. There are some indications, however, that bees seem to distinguish between individuals; although the recognition of their owner as compared with a stranger is a recognition of emnity rather than of friendship. On a day when bees are quite cross, and the owner has been working with them, and then after having been away from the apiary half an hour or so the owner should come with several strangers in the vicinity of the apiary, the bees will single out the owner and attack him, or follow him about in a scolding way, while the strangers may be undisturbed.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

A Beekeeper's Mountain Stroll

I left my cottage for a three days' tramp through the mountain on a bright sunny morning in June, in company with a party who knew the country. We took with us a very light camping outfit, such as we could carry on our backs.

We traveled only a short distance before we came to the slope. We started the ascent by the side of a beautiful stream that rushed and splashed as it passed over rocks and precipices.

The large amount of sourwood which was ready to bloom attracted my attention. I remarked that if there were any bees in this part of the country, they would soon be storing honey. When the noise of the water permitted, we noticed a faint hum above us, and saw that there were bees in large numbers working on slim-bodied trees which grew mostly on the water's edge. They were basswood. I looked for nectar. I saw tiny drops in each blossom. These trees were loaded with drooping blossoms hanging in clusters. I understood why the beekeepers of the North could make such great crops of honey from this source. As I looked at the high straight trunks I remarked that much had been said in our bee-papers about the supply of this timber fast diminishing, and that it would soon affect the supply of sections. It's all "bosh," for the inexhaustible supply here would make such a thing impossible.

The climb was toilsome, and the deep shadows made it rather dark, but every now and then we could see, through a small opening above us, the blue sky and sunshine. I said: "Is this not like the road to success?" We finally came to where the stream forked, coming from two different directions. We hesitated as to which to follow, but after considerable effort we found the direction to the summit. Then we came to where our stream was only a spring, gushing out of the side of the mountain, and just above this were great cliffs to be climbed. I said: "We have reached one of the critical points of our trip, and we had better eat dinner, rest and refresh ourselves, here where we have plenty of pure cool water, for the climb is steep and jaggy." Should we not do this often, while traveling life's way?

After much toil we lifted ourselves up to a part of the cliff where we could look out and see far over the country and down the rugged way we had traveled over. It was grand, and I said: "Is this not in some respects like a successful career?"

But we should not lose sight of the possibilities of beekeeping, which was the chief object of this climb. We noticed rough bark, crooked trees, with thin foliage — the black locust — the source of the light-colored, thick, delicious honey which we enjoy so much when at our mountain home. We continued our climb, our pathway narrowing until, after much physical struggle we placed our feet on the rocky peak. This climb was much like the business climb of life, arduous in the undertaking, pleasant in the success.

Here we spent much time looking over the country. It was grand beyond description. Leaving this point, we followed the Blue Ridge proper as it led from peak to peak. All along we had been enjoying the cool, ripe, delicious huckleberries which grew on low bushes about our feet. In many places the mountain's side under the forest appeared blue with the ripe berries. This is a great pollen plant, and it furnishes considerable nectar. The bees build upon it and on the abundance of maple that we see, in early spring, and by the time the next honey plants bloom they are ready to begin storing, swarm, etc.

A little farther we came to a gap on the ridge, where we could see the sun, and it was the most beautiful sunset my eyes ever looked upon. In the opposite direction there rolled up hundreds of great mountains, known as the Scaly Mountains, and it seemed as if the sky rested on the peaks of the highest ones. The surface of these mountains consists of rock or granite, but they are dotted here and there with clumps of trees. The sun was kissing them good-night.

Not far distant, on one of those great mountains, a tower was erected and the ridge we were following led to it. We spent the night in these cliffs, and next morning saw as beautiful a sunrise as the sunset was on the previous evening.

We found several bee-trees along the way. We passed a number of places where water was running over flat-top rocks, and there saw thousands

The McCain Yard at Fruitland Ga.

Mr. Wilder's Fargo Apiary in Fargo, Ga.

of bees sucking water and going in every direction to the great forest below, which is not inhabited. All around us was the roar of bees, for the horsemint grows there in all its glory. The forest must be full of bees, and this is a great bee and honey country. Beekeepers suffering from diseased or weak lungs could come up to this high country and be restored to health and at the same time enjoy prosperity by engaging in beekeeping.

When we reached the rocky peak which was the goal of our climb, we raised our hands to heaven, said our "little prayer," rested, ate our dinner, then went upon the tower and with our field glasses saw a mountain sight which only those can comprehend who have had a similar opportunity. Some mountains looked like stacks of rocks, others were in every imaginable shape. We saw, at the foot of our mountain, a little village, on the table land, which we reached before night, and found to be Highlands, North Carolina, where is located a great tuberculosis sanitarium where thousands of people have been and are being cured of this most dreaded disease. We found in a store there some honey in 2-pound sections, the first I had ever seen put up in this way. It was fancy. I paid 34 cents for a section of it. It was as fine in flavor as it ever was my pleasure to eat.

After spending the night there we returned home by private conveyance, as there is no railroad near and it is reached only by a steep, winding mountain road.

Our Yard at Fargo, Ga.

This is the picture of the home yard of our Fargo apiaries. It consists of 90 colonies. This was taken when about half the honey had been removed. This yard and the McCain yard gave us over 100 pounds average per colony of extracted honey.

Under the trees in the background flows the famous old Suwanee river near its head waters. The yard is divided into two parts. This was done by moving them each way this spring to keep them out of the high back waters of the river. While our Texas beekeeping friends were losing their bees from floods, it seemed that the same fate awaited us, and it was only after much effort on the part of the man in charge that they were saved.

Mr. Bradley has charge of this branch of our business, and like Mr. McCain he is at home, having been reared down the river a short distance. Both are ambitious. Their greatest desire is the management of a great bee business, and perhaps I will never be able to furnish them all the bees they could handle.

Our McCain Yard at Fruitland, Ga.

The picture of the McCain yard, consisting of 100 colonies, the home yard of our Suwanee river apiaries, was taken while the spring crop of honey was on the hives. It averaged four shallow extracting supers per colony. We believe in using plenty of supers, and we usually get them filled, too, by our method of spreading brood and storing room. These hives are raised one inch from the bottom-boards, also the covers are rested on end cleats, allowing nearly one inch at the top. We talk and write "ventilation" and "practice what we preach." Some one might say that these "open" hives would be a good prey for robbers, but they don't attack such hives much, especially if a little precaution is used to keep down robbing.

We interested Mr. McCain in bee-culture two or three years ago. Up to this time he was a trapper and hunter in the great Okefinokee swamp, near which he now lives. He is a bee enthusiast, and says that he never expects to go back to his old trade or do anything but keep bees. He follows closely my instructions and reaps results.

CALIFORNIA BEE-KEEPING

Conducted by J. E. Pleasants, Orange. Calif.

Closing of the Honey Season—Light Crop But Quality Good—How is Foul-Brood Carried?

The honey season, which is just closing, records the dullest market the trade has known for years. Very little honey has been sold so far. Producers are holding for better prices. This is probably the best course, with a light crop of excellent quality and sugar on the rise. Extracting from wild harvest is over. Beans are now in bloom, and are reported yielding well.

This ought to be an excellent season for fall increase, which is frequently done in this climate. There is considerable bloom yet from which the bees may gather stores, so there ought to be little trouble from robbing. White sage has held out even yet, and there is some sumac and wild buckwheat, while all the stubble fields abound in drouth weed. Wax weed is still in and blue curls in restricted areas. It is well to build up what we can this fall, as there was comparatively little spring increase. The number of bees was also reduced last year from different causes. There was little natural swarming in the spring, and most beekeepers were after honey rather than artificial increase.

Just as soon as possible, we should begin fall increase. Have ready young laying queens and start nuclei, either by division-boards or small nucleus hives. In these new hives should be placed several frames of hatching brood. If starting right now, queen-cells could also be used, as there will probably be drones for two or three weeks yet. I have practiced this method for several years, and it usually works well here. A 5 or 6 frame nucleus is preferable. These should make strong colonies for next spring.

A good many here practice the method of taking off the supers and wintering the colony in one story. If this is done it should be later in the season when all the honey can be put in one story. The extra combs, of course, must be put away in moth-proof quarters.

The health of the bees in southern California, generally speaking, is good, though European foulbrood has crept in to a small extent. I believe we shall be able to handle it. But there is a point on which I wish to ask assistance from all who can make accurate study of conditions. *How* is the disease carried? I would like to ask our Government experts to determine this for us if possible, as we are still very much in the dark on this point.

If this could be positively known it would greatly assist us in arresting the spread of the disease, and until we do know we are in the dark. I have found a few cases this year which utterly baffle any attempt to account for the disease being carried from any other apiary. We quarantined and watched our borders and did everything in our power to keep it out of our county from the first alarm which reached us that the disease was in the State. Still it came. We have very little, and, as I said, I think we can handle it by the requeening method. But what we need to know is how to practically prevent its spread.

Four years ago when we heard of the disease being present in the San Joaquin valley, in the central part of the State, I went there to study it. I found that several beekeepers who had suffered losses, believed the germs of the disease were carried in the air. They said it spread in the direction of prevailing winds. I wonder if this phase of the problem has been noticed in other places. I have not had sufficient experience to give an opinion in this regard, but am seeking light on the subject, as what we need to know is *how* the infection is carried.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Ontario Crop Prospect

In the July issue of the American Bee Journal, I stated that from appearances at that date, Ontario would have one of the lightest crops of white honey recorded for some years. A meeting of the Crop Report Committee of the Ontario Beekeepers' Asssociation, held recently in Toronto, decided that, from the reports submitted, an average of about 15 pounds per colony would not be exceeded. Personally, judging by letters from various parts of the province, and knowing how things are locally, I am inclined to think these figures high enough, and if strictly No. 1 white honey only was taken into account, there would not be as much as that.

In several counties adjacent to Toronto, a light yield was secured from maple, willow, etc., as well as a very small amount from clover and basswood, but so far, I have not seen a single pound of the honey that would pass as No. 1. At a time of the year when we do not think of getting any white honey here in York county, the bees at the north yard began unexpectedly to store nicely, and we have a half crop at that one yard. Not very much for a good year, but something to be appreciated in a year of failure, when all hopes of getting white honey had been abandoned for the season.

Wintering Prospects

In our own locality the season has been very dry up to date (Aug. 13). Quite a large acreage of buckwheat near our York county yards, but little honey stored as yet, owing to drouth. To be of benefit rain must come soon. Present indications are that it will be hard to get sugar for winter feeding, owing to the difficulties caused by the terrible war now raging, and naturally we are hoping for enough buckwheat to winter with, in case sugar is not obtainable except at a prohibitive price. However, this is a minor consideration at a time like this, and our hearts bleed as we think of the awful miseries caused by the war, to the millions and millions who are suffering and losing all that is dear to them, and through no fault of their own.

Introducing Queens

A poor season is a good time to test out methods of introducing queens. Since the direct method of introducing by smoking with any ordinary fuel has been recommended (for years I used tobacco smoke for this purpose), I have been successful in almost all attempts at introduction.

About three weeks ago a friend sent me two queens rather unexpectedly at a time when no nectar was coming in. Just a week previous another queen had come under the same condition from another friend, and as I had taken the queen away from a strong colony early in the morning and introduced the new arrival successfully in the evening, I felt like trying the same game with the other two. Accordingly early in the morning, to avoid any robbers nosing around, I hunted out the queens of two hybrids, one of them more than ordinarily vindictive, as results will show.

Queens were run in these colonies late in the evening, and the cross colony was given an extra hard smoking so as to be *sure* of results. Next morning I found the results *sure* all right, as on the cover placed in front of the hive was my nice yellow queen. About five days later I went through this colony and cut out cells started, and that evening ran in another queen after giving another smoking. The next morning this queen was outside, too. Since then I have had letters from two well known queen-breeders, one in Ontario and another in New York State, both reporting heavy losses by the direct method of introduction. As both of these men have introduced queens by the hundreds, I did not feel as mortified as if I had been alone, for "misery loves company."

It shows that conditions are bound to arise that make any plan of introduction fallible. This verdict might be modified if we except some elaborate methods used for the introduction of very valuable queens, but, as a general rule, some three or four of the recognized *common* methods of introduction are so sure that one willingly takes the chance of losing a queen now and then instead of going to so much work to be positive about results every time.

Caring for Super Combs

Last month I spoke of caring for the large number of super combs not in use because of the failure of the honey crop. Very little trouble occurred with the moths in combs in the honey houses until the last few days, when some are beginning to be in evidence. Some time in May a pile of supers was placed out in one yard to have the honey cleaned up—the combs had not been licked up after extracting last fall. These supers have been out all summer with only a hive cover loosely placed on top of each tier. Today (Aug. 13) no signs of the moths are present. Spiders have webs more or less all through the combs and not a moth gets a chance to deposit eggs. Last week I was up at the Lovering yard, and there we have over 100 full-depth supers piled out in the yard in like condition and not a moth showing its work. I will take the hint, and if another season like the present comes along, outdoors will go all the combs at once.

Feeding for Winter

No doubt many will be thinking about the feeding question by the time this issue is in print; in fact, some have written me already asking as to quantity to feed, time to do this work, etc. As to quantity to feed, be sure you have enough, and in a year like this we are more apt to err by giving too little than overdoing the matter, especially if sugar is dear and the pocket-book light, as is the case with many of us this year; at least I can speak positively as far as I am concerned. As to time, much will depend upon your location. Formerly we had no buckwheat, and we aimed to have all feeding done in September. Of late years quite a lot of buckwheat is sown, much of it quite late. While this late buckwheat yields little honey, enough comes in to keep the bees breeding, and there is a lot of brood in the hives much later than formerly.

As we like the bulk of this brood to be hatched before doing any feeding, I would like all to be fed about Oct. 10 or 15. As we usually have many colonies to look after, we have to start about Sept. 26 in order to get through by the middle of October. At that date we feed a thick syrup made of 100 pounds of sugar to 50 of water. A sack of sugar is dumped into a tank used for storing honey, and on top of the sugar a little over 50 pounds of boiling water is poured. A vigorous stirring with a large stick will in a few minutes give as good a feed as can be made. Best results are obtained by feeding the syrup quite warm, especially if the weather is chilly at the time.

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Systematic Requeening

How I wish my bees were as sensible as Dr. Miller's, page 279. He says: "The bees usually requeen in good time, if the matter is left to them." And for that reason he does not do away with 2 year-old queens, if they appear to be making good Sorry to say that I do not practice systematic requeening, *but* in my case quite a large percentage of the colonies fail to replace 2-year-olds before they fail, and often act this way just at the close of fruit bloom, and this means a setback for the clover harvest.

[The answer criticized by Mr. Byer is not by Dr. Miller, but by the junior editor, as may be seen by the initials, C. P. D. at the foot of the reply. The question had been asked of me. Dr. Miller might have replied in a way more suited to Mr. Byer's views.—C. P. D.]

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Supering

With the slow flow we have had this year, it has not been advisable at any time to raise the first super until it was three-fourths finished. And by that time the second super would be half full, in many cases. Then, changing places and placing an empty super on top answered the requirements of this season. I had four supers on only one colony, quite a number had three on, but the great proportion had but one or two.

The bee-escape method is the nicest in removing comb honey, but smoking the bees out, then removing the super and jarring the remainder out on the ground works fast and well if the bees are not robbing. Fifteen cases an hour can be easily taken off by the smoke and jarring method, by one man.

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New Net Weight Law on Section Honey

With the enforcement of the new net weight law there will doubtless be some changes in the methods of comb-honey production. If stamping the net weight on a section has a tendency to limit sales, the beemen will have to put out a section holding 16 ounces net weight in order to hold the trade. It is doubtful whether much more can be secured for a 16-ounce section than has been had for a 12½ ounce one. The public will no doubt get used to the change, and after those who have had the idea that whenever they bought a section of honey they were buying a pound get over their disillusionment the trade will go along as formerly.

For those who have been weighing their sections in the past, the law works little hardship. The time taken to stamp the sections is not long. By packing uniform weight sections in a case the case may be filled full, if a single tier case, and then the tops of the sections may be stamped quickly and the cover put on. Where the double tier case is used the lower tier is put in and the tops of the sections are then stamped, then the ends of the case are stamped, and the top tier is put in and these sections are then stamped and the cover put on.

By the use of the minimum weight stamps it is not necessary to weigh every section, but all doubtful ones must be weighed. Until one becomes sure of himself every section should be weighed, for no section will be allowed below the minimum stated. I think there will likely be trouble here and also the rubber stamped sections may be imperfectly stamped or the leaking honey will absorb dust and obliterate the marks.

There is one thing good about the stamping, and that is, the tops of the sections have to be well scraped or the stamp will not show.

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Packing Comb Honey

We have had a busy time in the honey house these days. Two to five girls have been busy cleaning the sections of comb honey, and it keeps one person busy nailing shipping-cases and another grading, stamping and packing the honey. One hundred cases of honey is the most that has been put up in one day. At this rate the work will not last many days, as half of the bees are run for extracted honey, and the flow has not been so bountiful as last year. Two of my apiaries will not average one case to the colony, while two others will do better than that, probably two cases to the colony, though the flow is not over yet.

In scraping the sections we find that old silver plated knives, cut off with the blade pointed and about half length, make excellent tools. Paring knives were used last year, but are not stiff enough. The table knives are much better. We pay the girls 5 cents a case for scraping the sections, and they earn from $1.00 to $2.00 a day.

NOTES FROM ABROAD

By C. P Dadant.

We were barely installed in a room in the Hotel St. Gotthard, in Zurich, when we received the visit of Mr. Spuhler, the translator into German of Bertrand's "Conduite du Rucher." He wanted to arrange to entertain us the following day, which was Sunday, and take us, in the afternoon, with a few other beekeepers to an apiary in the mountain above Zurich. We called upon him at his home in the forenoon, met his wife and daughter, saw his apiary, and took note of his honey extractor, of which we give a cut. This honey extractor is as much better than ours as their public roads are better than ours.

When we see the way in which they build everything, houses, factories, bridges, hives, bee houses and extractors, we think that if they came to see us they would regard many things that we have as shabby. But they don't consider cost. This extractor costs $28, in a country where labor is cheap. It is reversible, and the baskets open to put the comb in. The tin of the can is more like boiler iron, for strength than like American tin.

In the afternoon, they and several of their friends called at the hotel in two carriages and we went together through the city and up the hill to another such view as can be found only in Switzerland. There we met the beekeeper whom I have mentioned in the October number of 1913, page 343, who gave me the best possible arguments in favor of house apiaries. His bee-house is a model, built on a cement floor and foundation and roofed with tile, the hives ranged like so many closets, on one side, the extracting room and storing room on the other. No need of wheelbarrow or truck to carry the supers. One could not have things handier unless he could manage to have the bees bring the honey to the extractor. For feeding also, in cool or rainy weather, or at night, nothing can be more convenient. Each hive has an opening in the rear where the food may be poured into a separate partition of the feeder, where the bees cannot go.

But with all these conveniences, I would not exchange our methods for theirs. How could we produce our large crops in such cramped quarters? We often have two supers on a colony at one time, sometimes three and even four or five. Our large crops would be out of the question or we would need enormous buildings. Would it be possible to combine the use of a bee-house with the expansible hives

There Was a Jolly Crowd at the Des Moines, Iowa, Field Meet on July 16

and supers which enabled us to secure our large crops?

We did not ask how much honey they extract in a day. Neither did we dare tell them how much *we* extract, for fear of unbelief. Labor being cheap, time is no object, in Switzerland, and we often saw a whole family of seven or eight, men, women and children, exceedingly busy in an acre of wheat. What would they say if they saw our 40-acre fields cut by one man, with two or four horses, and a binder, in three or four days? But the Swiss raise fine grain, and whatever they do is done well.

While in Zurich we were more than once sorry of not being able to speak German. But we found enough people who spoke French or English fluently to get along fairly well.

We had a most enjoyable visit, for all these people treated us with wonderful hospitality, as well in fact as if they had known us for years. With the French Swiss, we rather expected a hearty welcome, for we had already a mutual acquaintance, and were not disappointed. But the hearty reception of the German Swiss was especially appreciated, since it was unexpected.

On our return from the mountain we met the renowned Dr. Kramer, the president of the German-Swiss Bee Association, who was thought by his friends to be still on his summer vacation in the Engadine. He made us promise to visit him the next morning. We did.

Dr. Kramer is a strong personality. He has been called by critics "the Czar of Swiss bee-culture." He is the positive head of a strong association. At the last report received by us, it numbered 9543 members, divided into 116 sections. This is aside of the Société Romande of western Switzerland. They have 36 experiment stations. But these contained only 54 colonies in all, too small a number for practical comparative experiments.

They also have a mutual insurance against foulbrood in which 121,702 colonies are insured. They have paid in losses about $4000, with about $360 left in their treasury, and the sum paid per colony for insurance annually is only *one cent*. Their association had on Dec. 31, 1912, a capital of 41,480 francs, or practically $8000. They had in addition a relief fund of 7055 francs ($1350) to indemnify the members who suffer from disaster, floods, avalanches, etc., common in Switzerland. This is an admirable organization of which the Swiss may well be proud, and which we ought to imitate.

As might be expected, Dr. Kramer had much to say to me concerning the improvement of races, for he knew that my aim was to investigate this matter. He is entirely opposed to the introduction of the Italian bee, and says they are unfit for the climate of Switzerland. He is satisfied that their mating stations, in narrow isolated valleys are preparing great progress. I suggested that a propaganda for the removal of drone-comb from inferior or undesirable colonies and the replacing of it with worker-comb would help greatly in preventing undesirable matings. But he assured me that the mass of beekeepers were not progressive enough for that work.

Dr. Kramer believes in in-and-in breeding to emphasize the qualities of a race, and it is in this direction that the efforts of the mating stations are bent. To my argument that nature seeks cross-fertilization, he replied by giving the instance of wheat and other cereals as self-fertilizers.

However, not all the beekeepers agree with this. Neither is their breeding of the pure black race of bees uniform. I saw more or less mixture of Italians wherever I went. Mating stations as now existing are objected to by many on account of insufficient isolation which prevents the positive control of matings. Mr. Spuhler, who is a very experienced beekeeper, assured me that he had known of matings at a distance of 6 kilometers. As this is only 3¾ miles, there is nothing astonishing about it. [See the article from Mr. Spuhler on page 311.—Ed.]

You will now have to follow us in a tourist excursion. On the evening of Aug. 25, we went to Neuhausen, near Schaffhouse, at the famous falls of the Rhine. We have seen Niagara Falls, the falls of the Yellowstone and the Yosemite, which are all greater in some way than the falls of the Rhine. Yet the latter have a peculiar beauty all their own and we lingered there, came back to them after leaving them and lingered again. We could have remained there a week and enjoyed their grandeur. The only thing that mars them is what we find at Niagara Falls, factories with industrial use of a part of the water. Nothing of this sort yet exists either at the Yellowstone or at the Yosemite. These will probably remain wild in spite of the ambition of electrical engineers. The greatness of the canon of the Yellowstone places this fall at the head of all.

The big castle at the Rhine Falls has been put to mercenary uses. It is controlled by venders of trinkets and souvenirs of all descriptions. That sort of thing is objectionable, and the government ought to take the matter in hand. The beauties of nature should belong to the public without hindrances.

Back towards the south we came and landed at Lucerne. Stopped at the Alpina hotel, where the usual breakfast of coffee, milk, butter and honey was served to us. I have not yet said anything about the quality of Swiss honey. It was a bad year in which to judge it. The only places where we saw really white honey were at the hotels, and we were told that in many cases it was a manufactured article. But it was good, and I would have accepted it as pure in most instances. The honey crop of 1913 was dark and strong. But the price is high, something like 16 to 25 cents per pound for extracted honey.

We took a long carriage ride around Lucerne. Saw several monoplanes flying about, for they have a large aviation field, and you can get a half hour ride for $20, we were told. Much as we would like to fly, it did not tempt us. We thought the country most beautiful. Small house apiaries caught our eye frequently. Everything is neat and everything was full of bloom. Economy shows everywhere. They save all the chips, all the tree roots for fuel, and one cannot see dead trees rotting in the woods as in America. They make bedding for their stock, and manure out of all the weeds and the low-land grasses. After leaving Switzerland we both agreed that we had not seen a single beggar there. The Swiss chalets are the most tasteful looking houses in the world. Their factories look like large homes, and I would not assure that I did not see lace curtains in some of their windows.

Dr. U. Kramer

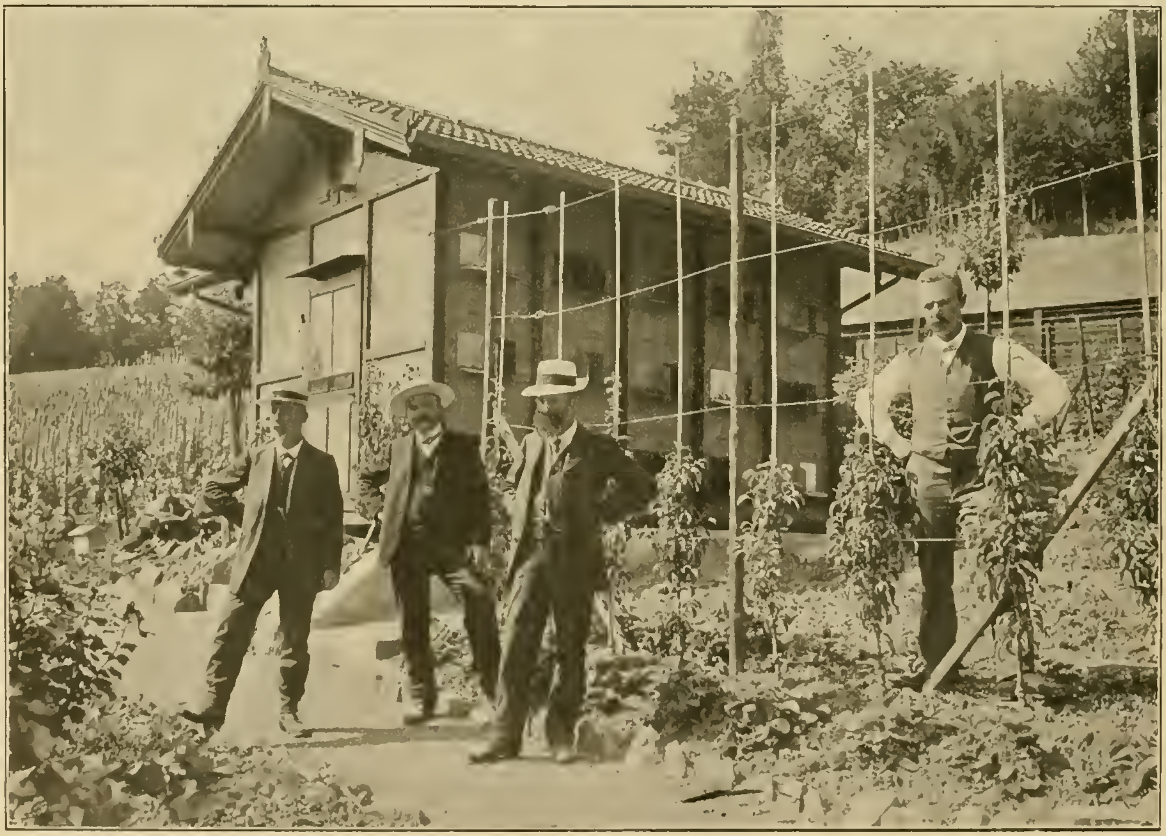
Another pleasant thing is the furniture, even in low-priced hotels. There is no "ginger-bread" about it, but it is of European walnut, and the panels nearly always correspond with each other. That comes from the method at the lumber mill of piling the boards in exactly the same order as the wood was in the tree before it was sawed. You can notice it at every saw-mill. So you may readily buy two boards that match exactly, because they have grown side by side and the veins are the same, and they have been kept together. That would be too much trouble, in America, and two boards that have been parted by the saw may never get near each other again, unless some fastidious person insists on regularity and good taste and has the money to pay the extra cost.

The floors are laid in lozanges, of two or three kinds of wood, even in ordinary country homes. They use stoves of earthenware, enameled in blue or green, which look like big closets, with brass doors. They are very slow to heat, but preserve their heat a long time, when once warm.

We went up the Rigi, as all tourists do. The weather looked dubious in the morning, but when we got half way up, the clouds disappeared and we had a magnificent view of the snow peaks, the Lakes of Lucerne, of the Four-Cantons and of Zug. Had dinner up there and good sunshine. Back by Arth-Goldau, we had an hour to visit that town which was destroyed by the landslide of the Rossberg in 1806, which buried four villages and killed 457 persons. The town is rebuilt on the scattered rocks, some of which are 50 feet or more in height. Human beings are like the ants and the bees, who repair their nest as soon as it has been torn down. The danger which lurks above their heads is unheeded till another catastrophe comes.

Gathering a Swarm in Zurich

I forgot that I am writing for a bee-journal. But, honor bright, we did not see any bees or have any bee talks for at least four days.


A model house apiary in the mountains above Zurich, visited by Mr. and Mrs. Dadant. Mr. Spuhler, our correspondent, is the bearded gentleman in the center

CONTRIBUTED ARTICLES~

Large Hive Considerations

BY D. BARONE.

IT is incontestable that the tendency is more and more toward large hives. And we cannot but remain surprised, not to say pleased, at the results of the last accurate investigations of J. E. Hand, the well-known author of the method of the "Divisible Brood-Chamber Hive" (American Bee Journal, 1914, page 58): "It is evident that a hive of 17-frame capacity is not too large for best results when viewed from the standpoint of economy and utility."

Is not the frank and sincere confession of H. H. Root, in Gleanings in Bee Culture of 1913, page 883, symptomatical? "By the way, when I went to Canada I had a feeling that the 12-frame hive was about two frames too large; but my feelings in this respect grew weaker while I was there, and have been much less perceptible ever since." How many beekeepers are there who, with seriousness of purpose and with a mind free from prejudice, have tested a larger hive in connection with the 8 or 10 frame?

What about Dr. Miller's censure of the Jumbo hive after his timid trial with only two hives of this type and for only a single season? I am sure that if Dr. Miller had persevered in his experiment, since he now advises the 10-frame hive, while before he recommended the 8-frame, so also he would counsel the use of the larger hive, because sooner or later the many advantages of the latter over the former would be apparent to him, a keen and careful observer. The importance of principles, of judgments, as well as of inventions of great scientists, men of letters and artists is always relative to the circumstances of time and place.

Langstroth gave us the mobility and the oblong shape of the frame. Upon both these principles, true beyond doubt, depends the modern rational culture of the bee. But the dimensions and the number of frames, allowing the utmost enlargement of the colony, and, consequently, larger returns in honey, must be the outcome of the debates among the learned and experienced beekeepers of the world.

In my opinion, the reasons that people here oppose the larger hives are of various kinds. I think, more than for any other reason, because it was the fashion for 8-frame hives as it is now for the 10-frame. On the other hand, many extensive beekeepers, even though convinced of the advantages of the larger hives, do not use them because of the expense of renewing the whole of their outfit. Of what value is it that the beekeeper wastes time, intelligence and energy to rear queens of the best stock when he does not give those queens room in accordance with their prolificness? How are we able to know the best queens if we do not give them this opportunity? Queens that can lay as many as 4000 and more eggs a day are much less rare than some believe.

In Italy, where the voice of Chas. Dadant was not "vox clamonis in deserto," in our Dadant-Blatt hives, with 12 jumbo frames, those usually adopted with general satisfaction, we have in May, per colony, not less than 10 frames full of brood, sometimes 11, and not infrequently all the 12 frames. Can we get so much brood in the 8 or 10 frame Langstroth? No. And is it not true that a smaller quantity of brood brings a smaller quantity of honey in the supers? Let us allow under the frames a space of about 2 inches, and we shall have made another condition that checks the swarming impulse. Large hives, without doubt, diminish the probability of swarming, but do not insure non-swarming. The reasons why the family swarms are many, they depend many times upon inopportune management by the keeper.

Many eminent beekeepers advise placing over the 8 or 10 frame brood-chamber another body of like size to which the queen may have free access for continuing the laying of eggs, while at the same time warning others against allowing heat to be wasted, as it is necessary to the development of the brood.

Well said, Mr. Hand (American Bee Journal, 1914, page 58), "The horizontal contraction and expansion of the brood-chamber is the correct principle. It should be of sufficient capacity to develop the fertility of the most prolific queens."

But many will say the larger hives are heavier and make operations slower. I reply that these difficulties are more imaginary than real. The larger hives are sufficient of themselves; their removal is less necessary; they make the outdoor wintering quite possible with the smallest outlay, and by employing two shallow supers only, with frames farther apart than they are spaced in the brood-chamber, if opportunely and skillfully handled, are more than sufficient for the largest yields of extracted honey. The aforesaid second body placed above the 8 or 10 frame brood-chamber, gradually ridding itself of the hatching brood, will become a super. Is it not easier to handle a half depth 12-frame super than a full depth 8 or 10 frame? In regard to the production of comb honey I maintain that the large hive responds equally well. In fact, the colony in a large hive, and with a good queen, when it has reached its greatest development, finds itself in identical conditions of narrowness to the colony in a small hive. However, with this difference, that while the colony in the latter will contain, for instance, 50,000 workers, the colony in the former will contain 75,000 if not 100,000.

Reader, value this paragraph of J. L. Byer (American Bee Journal, 1913, page 52): "By force of circumstances I have almost all sizes of hives in common use, from the 8-frame Langstroth to the 10-frame and 12 frame jumbo, and every spring, *without exception*, the bees in the 8-frame hives are the last to be ready for the supers."

If the bees are slow to go into the sections, we can make the contraction of the brood-chamber by the division-boards, according to Dadant's advice. But, in order to get best results, I would be pleased to substitute, *if need be*, the empty combs with combs full of brood borrowed from weaker colonies.

In the north of the United States and in Canada wintering is one of the greatest preoccupations of the beekeepers, and with good reason.

Many specialists seek to avoid the considerable losses during the severe winter; hence, the many types of double-walled hives, the many ways of packing hives with various materials, as well as the different plans of cellars. These make me think of doctors who try to cure the results without reaching up to the causes. Small hives give small colonies, which poorly resist hard winters.

The town where I was born, in Italy, is 2500 feet above sea-level. There it is not rare for snow and cold to confine the bees to the hive two months, and more. When in March or beginning of April I went over the colonies, I found most of them in a very prosperous condition, and with not less than three or four deep frames full of brood.

Locality! you will say.

I answer through Mr. Byer, who lives in Canada (American Bee Journal, 1913, page 52): "The only explanation I can give is that the colonies with the large brood-nests always go into winter quarters with a much larger cluster than the smaller ones. Given a large force of well wintered bees in spring, it is surprising how they manage to overcome all obstacles in the way of cold, and proceed to build their brood up rapidly."

Keep the families very strong, uniting the weakest; grant them a large supply of sealed stores, put on top of the frames, leaving a bee-space, absorbent material; taking care that the entrance be not less deep than one-half inch by the width of the hive; protecting it by a board inclined toward the front of the hive, excluding storms and winds (I prefer the alighting-board of the bottom to have hinged joints), and you will have made in the shortest possible time, and with the slightest expense, an ideal wintering.

R. F. Holtermann, who wrote in the American Bee Journal of 1913, page 94, values the 12-frame hive to such an extent that when he buys bees in the chambers, waiting for an opportunity and puts them into 12-frame brood-10-frame hives, he takes out the combs to sell the former. With the no small expense of about $1000 he built for his bees a cellar for which at the present time he no longer sees the necessity. I take the liberty to invite Mr. Holtermann, as well as others, to make a courageous and inexpensive trial this coming winter. He should try to winter about 10 colonies in his 12-

frame hives in the manner above mentioned, and without any added protection. Mr. Holtermann, perhaps, will no longer feel the need in successive winters of his mammoth winter cases. Perhaps his bees will consume a little more honey, but in compensation they will live in a more healthful atmosphere, and they will have brood before the others. This will facilitate ventilation and the escape of moisture and carbonic acid, and prevent dampness in the hives, which is a guarantee of strength and health. The outside combs and the thickness of the bee cluster constitute a most powerful defense against the assaults of the lowest temperatures.

In a recent issue of the New York Evening Journal I read the following golden words: "To keep disease down keep the windows up. Fresh air, which costs nothing, is more important to health than any food. Cold does not kill you, but germs and bad ventilation will."

Do you not think this wise advice suitable even to our bees?

Mr. W. Z. Hutchinson encouraged the keeping of more bees. To the beekeeper, and especially to the young beekeeper, I would say: Keep more bees in *large hives*. Only these give, with the least amount of money, time and labor, the greatest profits. Conform to the golden rule of the German beekeeper Oetll, "Keep always your colonies strong. Clear your mind from all prejudices, study and assist the bees in their real needs, have faith in yourself, and you will undoubtedly be successful."

New York, N. Y.

[The above interesting contribution was received by us early in the spring. Its author, who is an experienced Italian apiarist, now living in the United States, writes us as follows concerning hives of the Langstroth system, enlarged, championed in Europe by my father, who was the promoter of the large hives, and after whom they have been named:—Editor]

"My father, an old beekeeper, first adopted the Berlepsch hive, which, at that time, was considered the best, and I, then a boy, yet remember how tiresome and slow were the operations with those hives. Reading l'Apiculteur of Paris, and l'Apicoltore of Milan, he followed the advice of Chas. Dadant, and experimented on his large hives.

"The results were so satisfactory that for the last 25 years the roomy Dadant hives are used exclusively in our apiaries. The Italian beekeepers keep a sentiment of gratitude to the memory of C. D. His hives, together with a strain of peerless bees, have made their beekeeping an industry of the most successful kind."—D. Barone.

Controlling Swarming

BY C. F. GREENING.

In the American Bee Journal for July appears an article from "Virginia," relative to the way his Italians swarm on him, and asking what he should do in such a case, etc. Now I will give my plan to save him all his trouble.

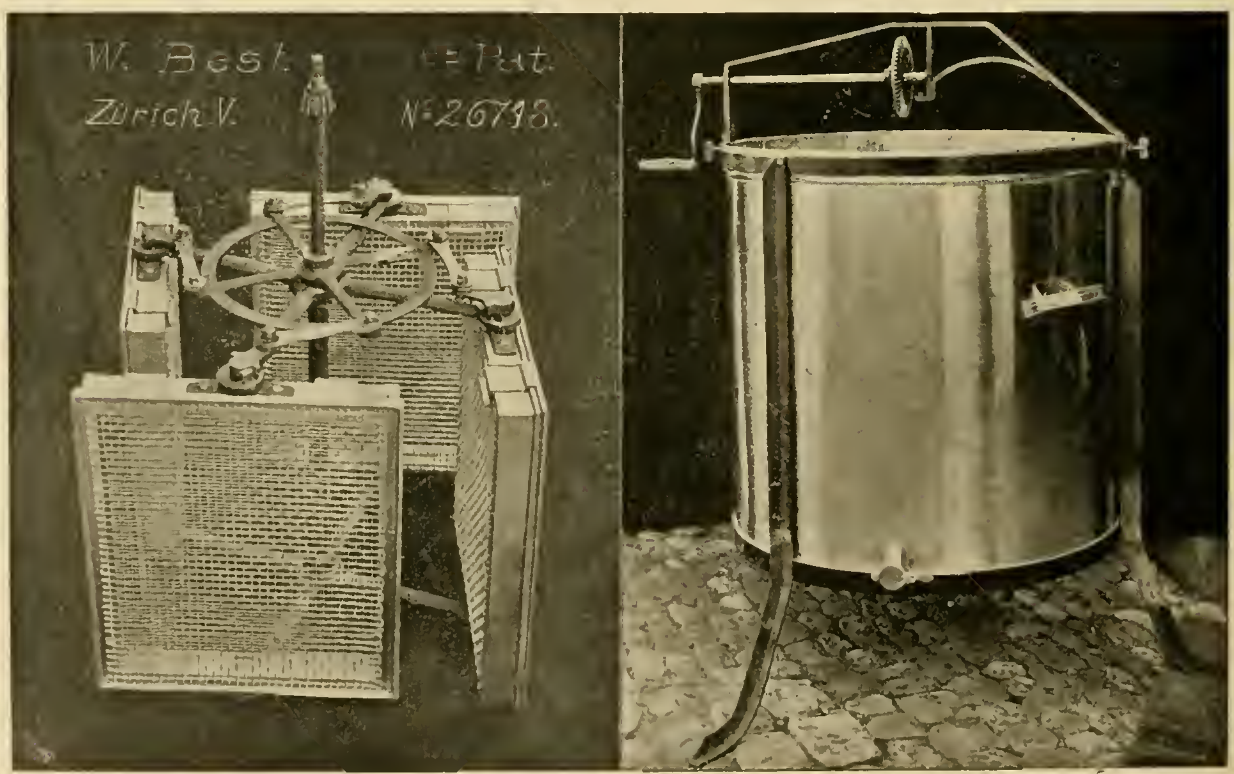
First, I am working for extracted honey principally, as there is less work and far more money in it in the long run. Working for comb honey would be rather more difficult. But I also do some of that.

I store my bees with a super of combs on top for winter, or, if not, I add the super as soon as it becomes warm, and let the queen deposit some eggs in it until honey flow begins.

When the flow starts, I lift up the super and place another under it full of combs. When that is reasonably filled I again lift the top super, placing another set of combs under it, then examine the top super and see if all the brood has hatched, or nearly so. If it has, I remove one frame from the center, go to a hive that has frames of brood in super, and simply exchange combs, always keeping some brood unhatched in the *top* super. As long as there is any space below that super in the hive proper, your bees will not swarm. My hives I run as high as my head, 8 to 10 supers, or if short I extract as required, but always leave or have some unfilled frames below the top super that has brood.

That is my method of non-swarming. I have not had a natural swarm in six years. Whereas before that my children and grandchildren have had to watch bees for four months of summer. Now I watch no more, but tell the bees "there's the honey. If any swarming is needed *I* will attend to *that*. You go for the honey and keep everlastingly at it." They always mind me.

Now for swarming in May, or up to the honey flow, whenever that occurs. We will say you want to double your colonies and no more. As soon as



Mr. Spuhler's Extractor and Baskets

Where we get 200 lbs
per colony and no
swarming at all "G."

C. F. Greening's Apiary

they are good and strong, and some honey coming in, take an empty hive, fill it with frames of comb, if you have them, or part combs and part guide combs, all but one frame near the middle of the hive. Now go to the best colony you have, and select one good frame of brood in several stages, and put it in the space left in the new hive, putting an empty frame where you removed the brood from.

Now take the hive with the frame of brood to a good strong colony, pick up the colony and carry it away to one side at least 16 feet, and put the hive with frames and comb of brood in the place where the colony stood. Contract the entrance to a couple of inches and let them alone.

This work must be done when a good number of bees are out in the fields; near the middle of the day is best. In a few minutes you have a thousand bees flying around, and they are completely lost. They will run in and out crazy for a while, but soon get to work with a resolution that, "As we have lost our home and mother we have the wherewith to make a new home and brood to rear a new mother." By the end of the second day they will be working like nailers to build up, while the hive you carried away is as still as a graveyard on a Sunday night. Practically all the field workers are at the old stand in the new hive. Now treat them the same as the first part of this article directs, and you have no swarms that year.

By following this plan you have one swarm each of increase, or none, as *you* elect, not as the bees would do if left alone. Follow the above and save colonies, save watching them, save doubling weak ones, save hives, and what is more important when the honey flow comes in all its beauty, you have every field worker at *work*. They are not crazy over the swarming fever or losing time strung up waiting for a good day, or building combs when they should be lugging in honey, while honey lasts.

Thus we have the bees all busy while honey comes, whereas if allowed to swarm in the middle of the honey flow, see what a loss you have caused by the demoralization of one two, three, or four swarms from one, and half of them won't get more than enough to winter on.

My colonies were eight stories high last summer; and while my neighbors got 25 to 50 pounds of honey, I ran up to 150, 200, and one colony 235 pounds. You see it is honey I was after.

Sequel: Build up strong before the honey flow, get the swarming out of the way, and let every able bodied bee tote in honey.

By my method you can build up any kind of swarm you wish or any strain of bees, because you select the brood to rear the queen from. They more readily sober down by taking a frame of brood from the hive you remove and place it in the new hive, because it is a part of the old home and smells the same. They will never desert their brood.

Grand Meadow, Minn.

Bee Culture in German Switzerland

BY H. SPUHLER.

THE culture of bees in German Switzerland differs very much from that in America. Instead of open air apiaries, we have house apiaries in which the hives are placed side by side and tiered in two or three rows. The apiaries are spacious buildings containing from 10 to 100 hives, and they often look very pretty from the outside. They are well aerated and lighted, and allow the bees to escape from the inside rooms without allowing them to come in. They are usually placed near the house of their owner, or in a garden or in an orchard. It is, therefore, easy to watch them, to notice their flight, to discover the beginning of robbing or of swarming, etc. They are sometimes built large enough to allow the establishment of a work shop in which the apiarist can work, prepare his frames with foundation, extract the honey, and melt the sugar for feeding in fall or spring. It serves as storing room for empty combs, extractor, feeders, etc.

In such a house apiary one can work in all sorts of weather, whether cold, warm or rainy. This is important in a country where the weather is so variable, and where we usually have over 150 rainy days in the year.

The hives are not opened from above, but from the rear through a door. They offer sufficient space for a row of brood combs and two rows of super combs above, the latter measuring each one-half the dimension of the brood-combs. Behind the combs of each row is a movable window sash of proper size held in place by a wooden wedge.

The frames are usually placed crosswise to the entrance in the Swiss hive, and for that reason examinations require much time and labor; for instance, in the latter part of May, when a colony is supplied with all its combs, 13 in number, if we wish to examine the center one, we must remove the first six and place them in another hive or a box, which is used for this purpose. Those who follow this system do not seem to appreciate the proverb, "Time is money."

This defect was recognized long ago, and there are now a number of hives made which are as movable as the American hives, such as the leaf hive of *Hoernli* (?), adapted to the Dadant hive, and my own hive, corresponding to the "Schweizerstock." In those hives, the frames are placed endwise to the entrance, so that when the rear sash is removed each frame is accessible from the rear. This arrangement permits numerous observations through the windows, such as noting the growth of the colony, its supply of honey, its building of combs, queenlessness by the restlessness resulting from it, success or failure in introduction of queens, etc. The handling of these hives is so simple that it permits to examine two or three of them, while only one of the Swiss hives could be examined.

The house apiary is also indispensable here because of the lack of room, as many people possess only a very small garden. But it is usually sufficient in size to permit of a building containing 10 to 30 hives, and the bee lover can have an agreeable and instructive recreation, with an addition to his resources. That is why we have so large a number of apiarists owning only a few colonies. The Canton of Zurich, with only 666 square miles of area, possesses 24,000 colonies of bees, owned by 1500 beekeepers, or about 36 colonies to the square mile, and 16 colonies per beekeeper. Very few men possess 100 colonies, and I know but one with 200 to 300 hives, earning his living with bee culture. In his case, the purchase and sale of honey is more profitable than his honey production.

As a rule, in German Switzerland the crop conditions are less favorable than in Romande Switzerland, where sainfoin is still largely cultivated. Here it is lacking. Our best localities are in the mountain valleys and in the plains where the pine yields honey abundantly. In the mountain where the bees can harvest from the bottom of the hill to the top, the crop is lengthened. In the plains it lasts but two or three weeks. If the weather is favorable, the apiarist is in good humor, as the supers are then filled. But we do not have this pleasure more than two or three times in ten years.

We have another drawback which keeps increasing, it is the more intensive cultivation of the land for profit. Hazel, willow and alder furnish much pollen, but their wood is of low value, and they are constantly removed for something better. Chemical manures are also injurious to honey production. It is for these reasons that, in spite of improved methods, our honey crop has not increased in the past 30 years. The average is from 8 to 10 kilos (18 to 22 pounds), and the average crop of an apiary rarely reaches 30 to 40 kilos. In many cases our bees cannot harvest enough to winter, and we have to feed them, besides leaving to them all the honey gathered. Many beekeepers remove most of the honey and replace it with sugar syrup. It is the low price of sugar which permits this.

Heinrich Spuhler

The race preferred in German Switzerland is the black Swiss bee, while formerly the Italian and Carniolan races were thought best, and our own was considered as degenerate. The introduction of Italian and Carniolan bees has made a slight change in this race, which now often shows, in its bees, yellow bands or spots and gray hairs. Probably the mixture has helped its regeneration.

For the past 15 years much time and care have been spent in the rearing of queens according to the principles followed in cattle raising, by selection of males and females. Every year, special courses and conferences are held by the breeders. The best black colonies are selected to supply eggs and larvæ for breeding, and minute care is used to secure for them the most favorable conditions during their growth. The matured cells are placed in boxes sufficiently large to accommodate a half pound swarm with two or three combs. Queens of selected stock are reared in an isolated location, a "mating station" which is supplied with a colony containing choice drones.

However these stations do not offer much guarantee of select matings, because they are sometimes only a kilometer distant from other apiaries, and it is a fact that queens often prefer strange drones from a distance of 5 or 6 kilometers (3 to 4 miles).

At the present time our apiarian authorities recommend in-breeding as an efficient means of fixing the good qualities of a race, while the Americans object, as we did once, that this inbreeding may cause degenerescence, and may be one of the principal causes of foulbrood. It may, therefore, be a good thing that our queens are able to mate at a great distance so as to prevent a risk as pernicious to bees as to beekeepers. Let us remain true to the principle that, in order to succeed, one should follow the natural laws existing among bees.

Zurich, Switzerland.

Fall Feeding of Sugar Syrup

BY J. A. MCKINNON.

IN your foot-note on page 129 of the April number of the American Bee Journal, you give the proper proportions of water and sugar for good bee feed. Every time I see that two to one formula given, I ask myself, does that beekeeper really know what he is talking about, or is it because he has the habit of saying it over so often, or is it because some one else said so and it must be so?

I have fed a few tons of sugar in different proportions, and I consider the two to one way of making the syrup a most wasteful method, excepting when 10 percent of honey is added. Otherwise in the late fall, when nights are cool, one-third to one-half of the feed so made will granulate or candy so hard in the combs that the bees cannot eat it.

I hear some one say, "I have never had that experience." Of such a one I would ask, have you ever looked through your hives and combs two or three days after feeding your colonies for winter with this two to one syrup? If so, you will be in a position to know; if not, you had better wait until you try it. If a colony is given as much as it can take down in 24 hours; that is, 25 to 40 pounds, fully one-half will be wasted, and the fact might never be known to the beekeeper unless he took the trouble to examine the combs, as the bees will start to cut the candied sugar out at once, and if the weather should remain warm, the most of it is carried out at the entrance or to the field.

With me, tartaric acid does not act much as a preventative. Last fall I had about 3500 pounds of sugar to feed for winter stores, and I thought I could prevent granulation by using a liberal amount of acid. I made some feed two parts sugar, one of water, adding one teaspoonful of the acid for every 20 pounds of feed. This did not help in the least, as in some hives the combs were candied almost solid. First, a thin crust would form on top of the unsealed syrup, and in the course of two or three days it would be as hard as flint. Anything that was sealed over did not appear to be candied. In cases where I fed only 10 pounds at a time the candying was not so bad, and where I fed early in the season, using a thinner feed, there were no candied stores.

I don't know that locality should make any difference in this respect, but what puzzles me is that so many extensive beekeepers endorse this method. I am under the impression that a good many beekeepers are wasting a lot of sugar, not to mention the time that it takes to dissolve it and cart it around the yard. Experience is the best teacher, and in my case it has cost me pretty high, and sometimes when I could least afford it.

Last fall when I noticed that there was a lot of this candied stuff in some hives, I made the best of a poor job, by refeeding or exchanging for sealed combs of honey, or I would take out three or four combs and brush the bees off at the entrance, then take the combs to the water barrel, and souse them full of water. This seemed to help some, although in a few hives it caused brood-rearing to start late in the season.

After this I will not feed any more of this two to one feed; half and half will do very well for mine, and I will feed earlier in the season, so as to have most of the stores sealed over. Ten to 15 pounds of feed might be wasted unknown to the beekeeper, yet the colony might have enough stores left to winter.

I would like to hear from others who have had experience, and who have taken the trouble to look through the hives two or three days after feeding for winter stores. Because one's colonies have always wintered, when fed this, is no proof; even an examination the following spring will not reveal much candied syrup unless the colony has died outright.

St. Eugene, Ont.

Editor Dadant suggested "two parts of sugar to one of water." Mr. McKinnon says "half and half will do very well for mine," and Editor Dadant desires my comment. My first thought is that I would rather not use either sugar or water. Honey is better than either, or both. Only in the utter absence of honey would I feed sugar syrup nowadays, and it would then be with a guilty feeling that I ought to have managed better so as to have had on hand a supply of heavy combs of sealed honey. And then if I did have to feed sugar, I wouldn't make it into syrup either thick or thin. I'd set a Miller feeder on a hive, pour into it dry sugar and then put in water. That's simpler, easier, pleasanter, and safer than feeding syrup. Ever so much less danger of starting robbing. And if I were forced to feed sugar, I'd try to do it so early that it would do no hurt to have the syrup very thin.

All of which, however, has little to do with the case in hand. Let's get down to it. It is simply a question as to the proportion of sugar and water if syrup is fed, and I understand Mr. McKinnon to refer to late feeding—an important factor. Mr. McKinnon does not agree with our Editor as to the proportion. Neither do I. Mr. McKinnon thinks he uses only half enough of water. I think he uses 25 percent too much water! My reason: Well, what's the use of giving the bees extra water to be evaporated at a time when the chances for evaporation are poor, and there is nothing to be gained by it? Two parts of sugar to one of water is thinner than honey; two and a half parts sugar to one of water is about the consistency of honey. Please remember that we are talking about feeding late, and feeding all in a lump, with poor chance for the bees to make any change in what is given them. The nearer, then, we can have our feed to the consistency of honey the better.

Let me hasten to say, however, that what the Editor was talking about, page 129, was feeding in spring. I don't know that I would want to make any change in his feed at that time, unless it might be to make it a little wetter. What Mr. McKinnon is talking about is "in the late fall when nights are cool."

The important part is to know the result of feeding thick syrup late, and Mr. McKinnon wants to hear from those "who have had experience, and have taken the trouble to look through the hives two or three days after feeding." I've had the experience, all right, having fed tons of syrup years ago, before I knew any better. I cannot, however, comply with the specification of having looked through the hives two or three days after feeding, as I'm not sure I ever did that, and I'm afraid the number that have is so small that there may be no response, so I will give my testimony for what it is worth.

I do not think I ever did any late feeding of syrup as thin as two to one; it was always two and one-half sugar to one of water. If feeding two to one would result in one-third to one-half of it granulating so the bees could not eat it, then putting in 25 percent more sugar should make the granulating at least 25 percent more, making 5-12 to ⅝ of it.

Mr. McKinnon would say it candied and I didn't know it, because I didn't look in two or three days, "as the bees will start to cut the candied sugar out at once." In that case I surely should have seen at some time some of the granules carried out, seeing hundreds of pounds were carried out year after year. I do not recall that I ever observed a single instance, although such quantities at the entrance and scattered around the yard should have been plainly seen.

"An examination the following spring will not reveal much candied syrup"—it will reveal some—"unless the colony has died outright." Which suggests that some colonies die outright, leaving the candied stores. In so large an experience, I ought to have found at least a few such cases. Is it thinkable that I should not have noticed it, even if there had been only a single case; that in a careful scrutiny of each comb every spring, I should never have noticed even the small quantity left; that I should never have noticed the imperfect combs where the bees had cut out the candied stores?

Is it not likely that his is the exceptional case, rather than that every one else is wrong? Reminds one of the old woman who said to her crony: "All the world's queer but you and me, Sally, and sometimes I think you're a little queer, Sally."

I always used an even teaspoonful of tartaric acid to 20 pounds of sugar. (If feed is given thin and *early*, acid is not needed.) Any candy maker will tell you that acid prevents granulation. Yet I know of at least one other case in which the syrup candied in spite of the acid.

Instead of asking why so many extensive beekeepers endorse thick syrup for late feeding, is not the question rather: "Why the rare exceptions?"

C. C. MILLER.

[Mr. McKinnon will pardon us for inserting this article so late. It was sent in April, too late for the May number, and we have thought it would be more timely for fall, as September and October are the months for winter-stores considerations. We have had the curiosity of investigating authors of former years on this subject, and we will give a review in the October number, on sugar for feeding.—EDITOR.]

Expansion and Contraction

BY J. E. HAND.

THE article by Dr. E. F. Phillips, in the July number of the American Bee Journal, contains an unusual amount of solid practical information concerning the prime essentials in economical honey production, information that beginners should preserve for future reference. There is one point, however, that I cannot help wishing he had brought out a little more specifically; this refers to methods of wintering bees out-of-doors in protected hives. In this connection he asks the question, "Have you ever seen a colony wintered in two hive-bodies well supplied with honey, and well packed, come out in the spring?"

While this question might be so construed as to express a doubt as to whether such colonies ever do come out in the spring, we feel disposed to modify and mollify the answer by saying that while we have known such colonies to winter well, experience has taught us that it was in spite of the poor protection provided by the two hive-bodies, rather than on account of it. This applies to the North, where the conservation of the heat that radiates from the winter cluster is imperative.

It is to be regretted that Dr. Phillips did not enlighten us concerning the correct method of preparing such colonies for winter. If he will pardon the liberty, however, I will offer a few suggestions along this line, for correct wintering methods are the prime essential in successful beekeeping in the North.

A study of bee nature reveals the fact that they are creatures enslaved by habit and guided by instinct; hence, they will usually do the same way every time under like conditions. For example, the habit of expansion and contraction is so highly developed in bees that a colony occupying two hive-bodies in summer, will naturally contract to the capacity of a single hive-body in winter. Such a colony would be poorly protected in a two-story hive regardless of outside packing, unless they can be induced to form the winter cluster in the top story. This practice, however, is evidently forbidden by habit and instinct, both of which wisely compel them to form the winter nest at the bottom of the combs and near the entrance, and follow the base of supplies by a gradual movement upward. The wisdom of this habit is apparent, for if the cluster reaches the top of the hive in zero weather their doom is sealed.

Owing to this trait in bee nature we have found it safer to follow their example and contract the wintering hive to half the capacity of the summer hive, and provide a 3-inch space under the frames to accommodate the winter cluster. With combs solid full of honey and suitable outside protection, bees in this condition can utilize the heat that radiates from the cluster, and will invariably winter well in spite of the cold.

Birmingham, Ohio.

Beekeepers I Have Known—"B. A. Aldrich"

BY FRANK C. PELLETT.

BERT ALDRICH, of Smithland, is one of the big bee men of Iowa. When it comes to total production it is doubtful if any man in the State exceeds his average crop. Here in Iowa none of our bee men number their colonies by the thousand as in a few western localities. However, perhaps there is not in the United States a beekeeper with not to exceed 400 colonies who can beat Aldrich when it comes to counting the profits. He does practically all his own work, and has the finest equipment of any man in Iowa.

As will be seen by the photograph, the honey-house is two stories high. The ground is on a level with the second floor on the north side, and the honey is all brought home for extracting. It is unloaded on the upper floor, and an 8-frame power-driven extractor takes care of it very rapidly. Instead of a honey pump, he has a drain pipe running directly from the extractor to a tank on the lower floor. This tank holds about 3000 pounds, and is sufficient to contain one day's extracting.

Some men with a system of outyards such as Aldrich runs, carry a small extractor from yard to yard and

The Picture Would Not Be Complete Without Sage Directlly in Front of You

do the work there. He says that he finds it much more economical to bring the honey home to extract, as he has to make the trips to the out-yard anyway. By using a power-driven extractor and large tank he can do nearly all the necessary work alone, thus reducing expenses to the minium. The honey house is 30 feet square, with the lower story walls of concrete. The total cost of the building, exclusive of equipment, was about $1000. There is abundant room for every operation, including storage for his hundreds of extracting supers during winter. A workroom, partitioned off in one corner, can be easily heated and necessary work carried on comfortably in winter.

1912 was a fairly favorable season, and the Aldrich apiaries turned out about 27,000 pounds of honey from the 300 colonies in four yards. In 1913 some increase was made in the number of colonies, and the production jumped to over 40,000 pounds. From the 1913 crop the modern home shown in the picture was built, and it did not take it all either.

The location is apparently above the average, being in the edge of the Missouri river hills. Some of the out-yards are in the hills and some in the bottoms, so that rarely a season fails to give a profitable crop in some of the yards. In case of a failure in one or the other it is not far to move the bees to pasturage. There is a considerable acreage of basswood surrounding the home yard from which a heavy yield is occasionally secured. Much of this timber is being cut, so that this will probably not be depended upon very much longer. Sweet clover in large acreage is within reach of one or two yards, and heartsease the main dependence on the bottoms.

There is considerable similar territory entirely unoccupied about 20 to 50 miles to the south of this location, and a few good locations near large towns which would furnish home markets for an ordinary crop.

Mr. Aldrich does not aspire to greatly increase his present apiaries. He has about reached the limit of one man beekeeping, and his income is sufficient for his needs. With a modern home, the best up-to-date equipment, 20 ton honey crops, and a most interesting family, he has every reason to be content.

Atlantic, Iowa.

* * *

Bees and the Colors of Clothing

BY JOHN H. LOWELL.

Some time ago the writer published a description of a series of experiments, which showed beyond question that a beekeeper dressed in black would receive more stings than one wearing white clothing. While dressed wholly in white, with the exception of a black band of cloth 10 inches wide sewed around my right arm, I opened a hive of bees and gently shook several frames. Immediately many bees attacked the black band, and continued to do so as long as I disturbed them, while not a single bee attempted to sting the left sleeve which was entirely white.

This experiment was repeated many times, and the position of the black band was changed, but the results were always the same—the black band was invariably fiercely assailed, while the white portions of my dress received very little attention. I estimated the number of bees on the black band at various moments at from 30 to 40, and it would be difficult to imagine how they could make greater efforts to sting than they did.

At this point a very natural question was: How would other colors affect the bees? Ticknor Edwards tells us ("The Lore of the Honey Bee," page 40) that during the Middle Ages beekeepers were warned not to wear red in the bee-yard, as this color was especially offensive to the bees. Accordingly red was first selected for experiment. A red band was substituted for the black one, but my clothing was otherwise entirely white. When I removed the cover of a hive and angered the colony, the red band was attacked almost as fiercely as had previously been the case with the black cloth. The white sleeve, meanwhile, received very little attention. The bee-masters of the Middle Ages were thus entirely right in advising against the wearing of red garments. During the past year Dr. Frisch, of Munich, has asserted that bees cannot distinguish red from black.

When a blue band was used instead of a black one, it caused a little more irritation than white, but very much less than black. Yellow and green bands were later successively substituted for black, but the bees paid absolutely no more attention to these colors than they did to white.

The experiments show that a beekeeper may wear in the apiary white, yellow and green clothing; but should carefully avoid a black or red apparel. Blue is less desirable than white, although much better than black.

Waldboro, Maine.

* * *

Some Cute Ideas

BY DR. F. A. BONNEY.

I do not doubt but that many oldish men, those who have to wear glasses as I do, are bothered with the sweat running down and mussing up the lenses. This bothered me so in looking for queens or eggs that I discarded my glasses entirely and now use a 3-inch reading glass which I carry in my pocket.

To insure that no moths get into my wax, I use a cream can with a tight cover and pour in a teaspoonful of formaldehyde from time to time. No self respecting miller will tarry where the odor of that chemical exists, so my wax is safe from week to week.

When I want to strengthen a colony of bees I put on a bee-escape, then on that put supers from neighboring hives which are filled with bees fanning honey. These go down, unite with the colony, and then I return the super to where it came from, or any other hive. There is no danger in this way of getting your queen lost, and more bees will remain than if the bees were shaken in front of the hive. Sprinkle a little peppermint water around to stop possible fighting. My supers are all over queen excluders.

To get rid of mice in the bee-yard, I soak wheat in a quart of water in which I have dissolved one dram (60) grains of strychnia sulphate. If you have ever tried to poison the neighbors' chickens you will know that a dose of poison that will kill a man is only a nice tonic for an old scratching hen, but if you have exaggerated ideas about toxic drugs lay down a couple of sticks, scatter the grain between them and cover with a board. The mice will certainly find it, and they will not go into the hive. I found four dead mice in hives this spring, and in no hive evidence of mouse occupation.

I am now sending out copy to papers and the rural magazines extolling honey as a cure for rheumatism. Since I caught my wife, I thought to quit lying, but cannot resist the temptation to copy the Karo Kusses and patent medicine fakirs' methods of making business. "Have you tried the *honey cure* for rheumatism?" is one line I am circulating. I advise one or two tablespoonfuls five times a day, and drink no water for at least one hour after taking a dose. Five tablespoonfuls per family in the United States per day would amount to 50,000,000 ounces, 3,125,000 pounds, or 260,000 gallons, worth that many dollars. In a year that would amount to about ——. Figure it out yourself, and see if it is worth lying about. *Nearly four* times the amount of honey now sold in the United States annually.

To save walking I use a small telescope to look over my decoy hives.

Working with the bees recently, when they were particularly irritable, I thought to try peppermint water on my person and the hives, and to my delight the angry buzzing ceased, and the bees quit stinging. I have not had opportunity to experiment further, but shall do so as soon as I find time. I think the water should be quite strong, say ten drops of the oil to half a pint of water.

Buck Grove, Iowa.

Honey and Biology

BY J. A. HEBERLE, B. S.

(Based on a lecture of Dr. Thoeni, published in the Sschw. Bienenzeitung.)

HONEY was highly esteemed in olden times, as well as now, but the reasons for this esteem have undergone some change. The ancients believed that the honey "fell as gentle dew from heaven," and was gathered by the bees. According to the writings of Dioscorides and Plinius, this was believed by the Greeks and the Romans, and seems to have been generally accepted until about the middle of the 16th Century. At that time two Franciscan monks showed that the sweet juice—the nectar—was but a secretion from the plants.

At the end of the 18th Century honey was studied by chemists, who showed that it mainly consisted of three kinds of sugars, principally invert sugar, some cane sugar, a little dextrin, water, formic, acetic, lactic, and succinic acids, also small amounts of albumen, mineral and coloring matters. With this was shown that honey is a very nutritious and very wholesome food, and quite important for the human body.

The study of the preparation of honey by the bee led to the discovery that the honey contained other substances besides those that were shown by chemical analysis. Erlenmeyer and Planta succeeded in showing that in the preparation of honey, cane sugar was converted into invert sugar, and starch into dextrin and sugar. These peculiar substances which caused these changes during the preparation of honey are called enzymes or ferments. Later, Auzinger showed that besides the ferments which made the invert sugar called "invertase," and those which change starch into dextrin and sugar called "diastase," there is still another ferment in the honey called "catalase." This ferment has the power of converting hydrogen peroxide into water and oxygen. Marpmann claims to have found still other enzymotic bodies, but this has not yet been corroborated.

The nature of these ferments is not quite understood; they seem to be bound to the albumen molecules. Only the effect they produce is known; but not how they come into existence; how they are produced. It is only known that they are derived from living cells. The ferments are, for the live process of all plants and animals, of the utmost importance. For instance, in the digestion and nourishing of the body they are indispensable, since without them assimilation is not possible. The ferments are quite susceptible to heat temperatures. A little less than 100 degrees C. injures them, and if the heat continues for a longer period they are destroyed. Since the ferments are derived from living cells, their functions are called biological.

The high esteem of genuine honey as food, dainty, and for its curative property for mankind is well justified from its chemical composition as well as from its biological qualities. This high esteem of honey, the great demand for it, and its price compared with other sweets have been the cause of artificial preparations, substitutes to defraud the consumer. Until recently the examination of honey included the appearance, taste, color, aroma, a microscopical examination, a quantitative chemical analysis for its principal constituents, dextrose, levulose, sucrose, dextrin, also tests for other substances that were commonly used in adulterating honey, etc.

Since the composition of honey varies considerably in different localities, sometimes even at very short distances, this is especially the case in Switzerland and parts of Germany, the difference as to the time of extracting, etc., it is very difficult by chemical analysis to state positively that the sample under examination is adulterated, because the natural product shows such great variation in its physical and chemical composition.

This task is made the more difficult because the adulterators, *en gros*, have very able chemists to make these artificial products. It is easy for them to mix the principal constituents that can be determined by chemical analysis in the same proportion as they are found in honey. It is easy for them to make the color and the consistency as wanted. To delude as to aroma, some natural honey is mixed with the artificial product, so that it is the most difficult of all food analyses. [A honey examination in Switzerland and Germany seems even more difficult than in the United States.]

The chemical and physical methods often fail to positively prove adulteration. The biological qualities of the honey are a very important criterion, since up to the present it has not been possible to produce these ferments in a pure state, besides they would be so costly that they could not be used for the preparation of artificial honey. The diastase reaction has proved useful in the examination of honey as to its purity.

Markt Oberdorf, Bavaria, Germany.

(To be continued.)

HOME OF B. A. ALDRICH—"THE HOUSE THE BEES BUILT."

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Bitter Honey

I have about 200 colonies, and on the hives is considerable honey mostly in half-depth frames—not wired. I find that a great portion of it is very bitter. I am at a loss to know what they worked on to produce such a taste in the honey. Last fall they were storing from asters and the bloom froze, yet they stored for several days from the frozen bloom. That honey was not all thoroughly ripened, yet the bees wintered finely. This spring they worked on dandelion, fruit bloom, maples, poplar, basswood, sweet clover, little boneset, and a meadow weed, with a flat white top; people call it "yarrow." Also some reported them working at joints near the roots of red clover. There was some honey-dew, yet I did not see any bees working on it.

I sell most of my honey cut from half-depth frames, and put it in buckets at 15 cents a pound, which is as much as I can get in sections.

I had thought of taking off all their surplus, then extracting the combs, and have them to put back to catch the fall flow, then feed where needed of this bitter honey. Can I clean the combs of this bitter honey so the fall honey will not have this bitter taste? OHIO.

ANSWER.—We do not know from what source the bees harvested that bitter honey unless it is from the dandelion. We have never seen enough gathered from this source to make a surplus, but it is quite possible that you had enough for that. As to the "yarrow" (*Achillea millefolium*), we have never seen any bees upon it. It is classed among the weeds of Iowa by Prof. L. H. Pammel. Its scientific name, *Millefolium*, meaning "a thousand leaves," comes from the fineness and great number of its leaves. Perhaps some of our subscribers can tell us whether the bees work upon it, and of what flavor is the honey.

There is no doubt that you can extract that bitter honey so as to keep it separate from the next crop. It will surely make good bee-feed.—C. P. D.

Feeding

We are now in the midst of a protracted drouth, hardly a flower to be seen. I have filled my bee-feeders with syrup made from cane granulated sugar and placed the feed in the yard where all the bees can help themselves. Is this method of feeding all right or should the feed be placed in the hive? OKLAHOMA.

ANSWER.—Feeding out in the open is a little more like having the bees gather from the fields; only if other bees are near you they will also partake of the plunder. The stronger colonies are likely to get the lion's share, but you can make that all right by taking filled frames from the strong and giving to the weak.

Queer Actions of Bees

What ails my bees? Quite a number of them emerge from the hive, try to fly but cannot, only hop along. They are all perfect bees, as far as I can see. They act as if they were loaded with honey; but I killed a couple and found the honey sac empty. They are not young bees, neither are they very old. MINNESOTA.

ANSWER.—It is probably a case of bee paralysis. As far north as you are it is not likely to be a very serious matter, and the trouble will disappear in a few days. If it should seem to increase, send samples of the diseased bees to Dr. E. F. Phillips, Dept. of Agriculture, Washington, D. C., and he will give you all the information needed without charge.

Requeening for European Foulbrood

1. Will it pay to requeen with untested Italian queens for European foulbrood, leaving the bees on their old combs? If not, how is the best way to subdue said foulbrood at this time of the year?

2. How long must old frames of brood comb be kept to be safe to use? NEW YORK.

ANSWERS.—1. Let me answer the last part of the question first. For a mild case of European foulbrood, supposing a vigorous queen of the best sort is present, the best treatment I know of is to keep the queen caged in the hive for 8 or 10 days. That's all—the bees will do the rest. If the case is a bad one, it's a pretty safe guess that the queen is no longer good. So she should be killed. At the same time that she is killed a virgin queen of best stock, not more than 24 hours old, should be dropped in the hive or placed on a comb. Instead of that a sealed cell nearly ready to hatch may be given in a cell-protector, or a day or two later without the protector.

Whether the case be mild or severe, it will probably pay to replace the queen with one of best Italian blood, if the queen is not already one of that kind. Italians are in general more vigorous than blacks or hybrids, and there may be also something in the claim that Italians, independent of their vigor, are more nearly immune to European foulbrood than others.

2. I doubt that age alone will make a diseased comb *entirely* safe. But after it has been kept until the dead brood is entirely dried up, then there is probably not one chance in fifty that there is any danger. And a comb that has been kept 8 or 10 days without any eggs being laid in it is probably as safe as one kept a year.

But remember that we are talking about European foulbrood. I wouldn't want to use a comb affected with American foulbrood if it had been kept 10 years.

Uniting—Wintering—Foulbrood

1. Is it advisable to unite a strong colony with a weak one in July or August or wait until spring?

2. Will a colony that hasn't swarmed winter on the lower story of an 8-frame hive?

3. Is it a sign of foulbrood if the lower story has three dead bees in capped cells. They were full grown, and were the only dead cells found, and when opened had a strong bad odor? WASHINGTON.

ANSWERS.—1. If the one colony is quite weak, or if you are not anxious to save the queen, then you had better unite now, since there is much danger that a weak colony will not winter through.

2. Yes, a number of my colonies that have not swarmed will have to do it.

3. A little uncertain. If those three are the only ones, and no more follow, then you may decide it is not foulbrood.

Finishing a Super Above Brood-Nest—Dark Honey

1. When a super of unfinished sections of honey is placed under the brood-nest will the bees take the honey and put it in the super above the brood-nest to fill up the unfinished sections.

2. Was the honey in the northern part of the State as dark as ours is down here? Ours is all honey-dew and black. ILLINOIS.

ANSWERS.—1. In the few cases in which I have tried it, they would not carry it up.

2. In this locality the honey has been very white. I think bees are not so likely to work on honey-dew if they have plenty of flowers from which to obtain a better article. I suspect that in your location there was a dearth of flowers.

Carniolans—Italians—Ventilation—Wintering—Transferring, Etc.

1. By the use of queens I intend to work my apiary into one race of bees, and am at a loss to know the best one for my conditions. It is claimed that the Carniolans will fly earlier, later, and on darker days than the other races of bees; take to the supers more readily than the Italians, produce the whitest wax, and use less propolis than other bees. Some claim that they work buckwheat and like it better than others. Above all they winter the best of all races when kept in a cold climate. My bees will all have to be wintered outside, and the temperature will several times each winter go 20 degrees below zero. The worst thing I have been able to learn against them is their propensity to swarm. What is the truth about the above claims? Would the so-called "jumbo" hive carrying 10 frames

M. E. LACOSS AT WORK IN TONAWANDA, N. Y.

of standard length and a bit over 11 inches deep, help any about the swarming if the hive was equipped with a ventilated cover?

2 Which type of Italians is best for New Hampshire, the golden or the leather colored? Will either or both work the red clover? Which will winter the best?

3. I judge ventilation is an important thing in controlling swarming. How is it best done, through the bottom-board, or by using a hive cover like the Root ventilated gable cover, and regulating the size of entrance? Are there better ways?

4. Would you judge a single-walled dovetailed hive like the jumbo mentioned above to be a good one for me to start with. I do not like to pay the price of the double-walled ones. What about wintering out-of-doors in this hive? Can I do better than to get telescoping cases to put over the hives in winter? Should they go on with or without the hive cover being on, and should anything be used between the hive and the case? Have several old out-buildings on the place, some with an apology for windows and some without. Would these be better for the bees than to be left outside? They would break the cold winds and make temperature changes more gradual. If better to put in here would you advise the cases? How should the entrance be left for this kind of wintering?

5. What is the proper fuel for the smoker?

6. What is the best way to transfer bees from an old-fashioned hive to a modern frame hive? Is there any satisfactory way to do it without patching up the old combs into the new frames?

7. How could I best add a weak colony in an old-fashioned hive to a small colony in a modern frame hive? In transferring where the old combs are patched into the new frames, and do not fill nearly all the new frames, should the remaining ones be filled with foundation? Should a division-board be used and moved as the foundation is accepted?

8. I have heard that the best way to put foundation into the sections was to put a narrow piece at the bottom and a piece at the top wide enough to almost reach the bottom one. Is that right? How can I make the top piece hang straight down, or will gravitation hold it there if once bent down?

NEW HAMPSHIRE.

ANSWERS.—1. It is a very difficult thing to get at the real truth about the different kinds of bees. One man says he has found Carniolans superior to Italians; another says they are inferior, and both may be honest in their opinions. The first has had unusually good Carniolans and unusually poor Italians, while the second has had just the reverse. For Carniolans are by no means all alike, neither are Italians. Take the two races as a whole, and I doubt whether all or any of the claims to superiorty that you have mentioned will hold good. The fact that the great majority of practical beekeepers keep Italians speaks with some emphasis. The large hive you mention would have some effect in keeping down swarming with any race of bees. But you cannot rely too much upon it. One year a colony in a jumbo hive was the very first to swarm for me.

2. A good golden is better than a leather-colored, and *vice versa.* On the whole I should prefer to take the chances on the leather-colored. Probably no difference in wintering.

3. Give ventilation at both top and bottom, *and also in between.* This last you can hardly accomplish if you are running for comb honey, except that you can slide the bottom super forward so as to leave a ventilating space of about ¼-inch at the back end. If you extract you can "stutter" the stories: The first story over the brood-chamber shoved forward so as to leave ventilation at back end, the next story shoved back, the next forward, and so on.

4. Like enough the hive mentioned would suit you all right. It does not matter so much what the outside protection, and it is better to use packing. The hive cover may be on or off according to convenience. But I wouldn't advise you to winter in a building above ground. To be sure, some make a success at it, but most do not.

5. It's largely a matter of convenience. Any old thing that will burn is likely to answer all right, provided it is easily obtainable. Probably nothing is better than dry hardwood chips. A favorite with some is the greasy cotton waste that is thrown away after being used in machine shops or on locomotives. Then there is bark, planer chips, cowdung, cotton rags, etc.

6. Wait until the colony swarms, and hive the swarm in an approved hive. Twenty-one days later drum the bees out of the old hive and add them to the swarm; then chop up the old hive and melt up the combs. Or, split up the hive and brush the bees off the pieces of comb as you cut them out.

7. Drum out the weak colony and add it to the other. The bees will unite more kindly if one hive be set over the other for three or more days, with wire-cloth between them. Yes, fill out the space with frames filled with foundation, and no division-board or dummy will be needed.

8. Use a bottom-starter ⅝-inch deep, and a top starer to reach within ⅛ inch of it. Gravitation will make it hang straight.

Excessive Swarming—What to Do

Last spring I bought a colony of bees and was very anxious to have them swarm. The first swarm issued July 13 July 20, the mother colony swarmed again. This swarm covered six frames. On July 24, the third swarm issued from the parent colony.

A week later I opened the parent colony and found that the bees had done nothing in the super. The body of the hive was full of honey, and I found three queen cells. Two of these I destroyed. The cap of the third seemed loose, and soon the queen crawled out, at least I thought she was the queen, though she looked like any other bee. Do you suppose I have left the colony queenless?

Swarm No 1 has made lots of honey, while the other two swarms and the parent colony have made nothing. Had I better unite these and how, or would it be better to give them frames of honey from the other hive?

Should I get new queens for the two later swarms and for the original colony? Should I go over the combs every 10 days and cu out queen-cells?

NORTH DAKOTA.

ANSWER.—There is nothing unusual in the program your bees have followed. The mother colony having sent out three swarms has not bees enough left to do anything in the super, and all the bees are crowded into the brood-chamber. Neither are the second and third swarms strong enough to do much, the first swarm being the only one strong enough to do super work.

When a colony prepares for swarming, it starts quite a number of queen-cells, and you found what were left after the last swarm issued. It is not likely that your cutting out those last cells made any difference about swarming, for it is a rare thing for the fourth swarm to issue. You may or may not have made the colony queenless by cutting out the cells. If the bee that came out of the cell was a queen, then the colony is queenless, since you cut out the other cells. But you say the bee that came out of the cell looked just like any other bee. It is quite possible that it was a worker. Sometimes a worker crawls into a queen-cell after the queen has left it, although the capping of the cell looks as if the queen has not yet emerged. If that was the case, then the queen was left in the hive and the colony is all right You cannot be certain about the queen by the carrying of pollen. If you do not find eggs in the hive about 10 days after the last swarm issued, or at least in two weeks, you may decide the colony is queenless, in which case you will give it a queen, unless you prefer to unite with it the weakest afterswarm. The chances are that both afterswarms have queens all right. The likelihood is that they will build up without any help from the first swarm, which can be left undisturbed at its work of gathering honey. Of course, if the bees do not gather enough for winter you will have to feed.

It is not likely you will have any difficulty in telling a queen when you see one, by its greater size, especially greater length.

No need to go over your hives for queen-cells now, after swarming is over.

REPORTS AND EXPERIENCES

Hardly Make Living

Honey crop will be short this year; in fact, there will be none here. Bees will hardly make a living.

FRANK SHUPE.

Mazon, Ill., Aug. 1.

Condition of Bees in Eastern Illinois

It has been very dry. The corn will not yield 25 percent of a crop. In some places it is fired to the top. We had no rain from the middle of May till Aug. 10, when we had a good shower, but it is too late for the bees.

A neighbor who had 8 colonies in the spring has only one left. They left their hives. The beekeepers who do not feed their bees will go out of commission.

I started inspection work at Donovan, found one foulbrood colony. I found three in Watseka, eight in Crescent City, none in Gilman. In this place many hives had surplus honey. One man had several cases ready to take off. The reason of this is that near Gilman there is a field of about 75 acres of sweet clover.

In Lodi, bees were holding their own, no disease. In Paxton, I found two cases. At Hoopeston, I found one case, west of town. Mr. G. T. Willis, on the east, has an apiary of 30 colonies, all golden, which is a credit to Hoopeston. In fact, it is the neatest and best kept yard I have seen.

In Martinton, in one yard of 20 colonies, I found 19 diseased; in another yard of 5 colonies, 3 were diseased That was the worst I ever saw. They spend all their time reading the war news and neglect their bees.

J. H. ROBERTS, *Deputy Inspector.*

Watseca, Ill., Aug. 15.

Half a Crop for Nevada

Up to the present, only the strongest colonies have gathered any surplus. The season is poor. Alfalfa, which is the principal source, has been badly killed down by severe frosts and scorching heat. I think we will do exceedingly well if we get half a crop.

J. E. PATTON.

Halleck, Nev., July 21

Bumper Crop for Kentucky

The honey crop has been a bumper one here this season. Bees came through winter in fine condition. We use no flour here. In early spring the soft maples bloom, with just a few days of sunshine, then pear peach, willow, apple, persimmon, locust.

white clover and chestnut all bloom in rotation. Basswood, sumac, sourwood, white alder, and various other flowers furnish nectar until cold weather. Bees go into winter with a full supply of stores.

I winter out-of-doors, and rarely lose a colony. My best colony stored 200 pounds of comb honey this year, which sold at $20 per hundred; the rest averaged about 100 pounds. I expect about 50 pounds per colony from the fall flow, which is generally heavy. The fields before frost are a solid bank of flowers. Some colonies store more than 150 pounds from this source.

Gimlet, Ky., July 21. Cecil Whitt.

Crop Report—Pleasant Summer in California

Honey is still coming in on many southern California ranges, and will probably reach 60 percent of a crop over the unirrigated sections.

The summer has been one of the most pleasant I have experienced in my 18 years of California beekeeping. Honey is of good body, nice flavor, but not as white as that produced some years ago.

Corona, Calif. L. L. Andrews

Discouraging

I have 55 colonies of bees. They have done but little good this year. We had no white clover, and it is dry. I think they will not gather any honey this fall. I haven't taken any off yet. My bees wintered good, and were in good shape this spring. Swarming has not bothered much. I am discouraged, but will not give it up; will try again.

Ilasco, Mo., Aug. 14. S. P. Young.

Too Dry in Illinois

My bees were strong in the spring, and started to swarm early, as I had the first swarm May 11. I have nothing but Italians, and there are no bees around this part of the country for miles. I run my bees for comb honey, as I sell all my honey at home. The weather in Illinois has been too dry; but the second crop of red clover is now blooming, and the bees are working on that.

L. A. Tornquist.

New Windsor, Ill., July 27.

125 Pounds Average

We had a short honey flow from clover and basswood, but our bees were in excellent condition, and our 16 frame colonies averaged 125 pounds per colony of the finest quality of extracted honey, with plenty yet in the hives for winter. We seldom get any honey after basswood. The rainfall has been light, and a severe drouth is damaging young clover; alsike is our main dependence.

J. E. Hand.

Birmingham, Ohio, Aug. 12.

A Thousand Pounds from 70 Colonies

My bees have given me very little surplus this year. It has been very dry here and very little clover. The bees are very strong, and I think they will get plenty of winter stores. I had very few swarms, though the hives were full of bees. From 69 colonies, spring count, I will have about 1000 pounds of honey, most of it dark, and have increased to 90. Hoping for a better crop next year, I will try and be content.

Edward T. Knoll.

Clarksbrg, Ont., Aug. 13.

Fire Blight Alarming Orchardists in Yakima Co., Wash.

In Yakima Co., Wash., there are 55,000 acres set to orchard. Fire blight made its appearance about three years ago. Orchardists were warned of its existence, and urged to use every effort to stamp it out, and a fairly vigorous effort by resident owners has been made to eradicate it, but at this time it is recurring to a more alarming extent than at any previous time. Orchardists are thoroughly alarmed. In the list of agencies that transmit the bacteria of blight they have placed the honey-bee and naturally the apple raiser is getting hostile. They are holding meetings and organizing so-called protective leagues, or rather clubs.

At the request of the Grandview orchardists, Gov. Lister attended a meeting, and it was reported in a local paper he stated that he believed they would be justified without warrant of law in going to the orchards of owners who refused to combat the disease, and cut them down and burn them.

I am informed that at one of these meetings one of the speakers made the statement that he knew of a way to get rid of the bees, and that it was to spray with an arsenical solution when the trees were in full bloom that an apiary of 40 colonies had been taken care of in that way near Sunnyside. Bees in the neiborhood of Sunnyside were badly injured by spray this season, but so far as I know no colonies were destroyed.

We are too inclined to be satisfied if it is the other fellow's ox that is being gored.

During the season of 1911, a pear tree in a small orchard owned by the writer began to blight. Taking the view commonly accepted that it was due to a transmissible organism, I watched the tree closely, cutting off the diseased limbs from time to time and burning them. An apiary of about 80 colonies of bees stood 8 or 10 rods distant, and at no time did I see a single bee visit the diseased tree, and while this does not prove that bees do not carry the infective agent of blight, yet it is just as conclusive as the prevalent belief that they do. What we need in all cases preceding actual proof is men with open minds, minds that refuse to accept suggestions or be swayed by beliefs.

A. E. Burdick.

Sunnyside, Wash., June 8.

The Boyum Escape Improvement

I notice in the August American Bee Journal a bee-escape board improved by Geo. A. Boyum. A similar device was illustrated in some of the journals 12 or 15 years ago. I don't remember the originator, but I remember the pleasure I felt in making an improvement by running a strip from each corner of the board across to the hole in the escape; a trial quickly convinced me that supers were cleared no sooner than before, and others reported the same result. As an amateur, I suggest that when the first frightened bee finds the way to safety through the escape, her fanning wings instantly send the news throughout the supers and a line of march starts immediately for the opening, and with or without the device the supers will be cleared as fast as the capacity of the escape will permit, or as the bees desire to leave.

E. M. Cole.

Audubon, Iowa, Aug. 17.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Phelps' Golden Italian Queens will please you.

For Sale—Untested Golden Italian queens 60c each; 4 hybrids, $1.00.
J. F. Michael, Winchester, Ind.

Bees and Queens from my New Jersey apiary.
J. H. M. Cook,
1Atf 70 Cortland St., New York City.

For Sale—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

Leather-Colored Italian Queens for sale. Send for price-list.
Geo. B. Howe, Black River, N. Y.

Pure Tunisian Queens, tested, $1.00; 2-lb. bees with tested queen, $4 00. Safe arrival guaranteed. Lenoel, Nabeul, Tunis.

Reduced Prices for August and September. Untested queens of my 3-banded Italian stock. One for 70 cts.; 6 for $3 90; 12 or more at 60 cts. apiece. No disease and no better queens at any price. Full colonies and several apiaries for sale.
H. D. Murry, Mathis, Tex.

Three-banded Italian Queens, bred to business. Satisfaction guaranteed. Untested, 75 cts.; six, $4 25.
Chas W. Zweily, Lemont, Ill.

Queens of Quality—Three-band leather color. Unt., 50 cts. each; sel. unt., 60 cts. each. A few sel. tested at $1.00. Satisfaction guaranteed. J. I. Banks, Liberty, Tenn

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During Sept. I will sell untested queens of Robey stock mated to Howe's strain of drones at 50 cts. each; pure mating guaranteed D. G. Little, Hartley, Iowa.

Caucasian and Carniolan queens from the original importer. See larger adv't. Frank Benton, P. O. Box 17, Washington, D.C.

Untested Queens, 75c each; $7.50 per doz. Nuclei $1 25 per frame. Bees, $1.50 per pound. Full colonies, 8-frame, $6.50; 10-frame, $7.50.
Stover Apiaries, Mayhew, Miss.

For Sale—Fine Italian Queens. See my large ad. in this issue.
J. F. Archdekin, Rt. 7, St. Joseph, Mo.

Italian Queens for sale. Untested, 90 cts; six for $4.75. All queens are reared from my imported mother. Jul. Buegeler,
Rt. 1, New Ulm, Tex.

1914 Queens—Moore's strain of leather-colored Italians. In April at 75c. Bees by the pound and Tested queens. Write us for prices on nuclei. Address,
Ogden Bee & Honey Co., Ogden, Utah.

Queens, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

Queens—10 percent discount for orders received before May 1, to be filled in May and June. Tested, $1.00; untested, 75c. Dead ones replaced free. 2A9t
S. Click, Rt. 2, Box 16, Mt. Jackson, Va.

We Will be in the field with good Italian Queens in June for $1.00 each; 6 for $5.00. Two-frame nuclei in June without queen, $2.50; with queen, $1.00 extra.
D. J. Blocher, Pearl City, Ill.

Northern-reared Queens of Moore's strain of leather-colored three-banded Italians. After June 15, untested, $1.00; 6 for $5.00; 12 for $9.00.
Ramer & Gluen, Harmony, Minn.

Phelps' Golden Italian Bees are hustlers.

Italian Queens, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or $7.25 per dozen. Safe arrival guaranteed.
W. W. Talley, Queen Breeder,
3Atf Rt. 4, Greenville, Ala.

For Sale—1913 hatch sel. tested, Aug. $1 00 each; Sept., 75c each as long as they last; wish to replace with 1914 for 1915 sales. Will sell a good breeder for $1 50.
E. E. Mott, Glenwood, Mich.

High Grade Queens by return mail. Tested, $1.25; warranted, 75c each; choice breeding queens, $2 50 each. Italian Carniolan or Caucasian. Virgins of any of the above strain, 3 for $1 00. Stanley & Finch,
1451 Ogden Ave., Chicago, Ill.

Pure Golden Queens, the best that twelve years can produce. Untested, $1.50 each. Select tested, $3.00 each. Breeders, $5.00 to $50. Send for booklet on "Bees and Diseases." Geo. M. Steele,
30 South 40th St., Philadelphia, Penna.

Queens by return mail or your money back. Guaranteed purely mated. J. E. Hand strain of 3-banded Italians. Bred for gentleness, honey gathering and wintering. State inspector's certificate. Select untested, one, 75c; six, $4.00; 12, $7.00. Tested, one, $1 00; six, $5.00; 12, $9.00; Select tested, one, $1 25; six, $7.00; 12, $13. Breeders, $4.00 each. Write for price on large orders. Safe delivery and satisfaction guaranteed in U. S. and Canada. Ten percent discount on 30 days' advance orders. Reference, First National Bank. J. M. Gingerich, Arthur, Ill

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

THE BANKSTON Bees and Queens are as good as the best. Golden, Three-band and Carniolan. Tested, $1.00 each; untested, 75c. Queens ready to ship April 15. Bees, per pound, $1.50. Nuclei, per frame, $1.50. Write us for prices on large lots of queens. Try us and be pleased.
Bankston & Lyon, Box 141, Buffalo, Tex.

GOLDEN and 3 banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $2.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

FOR SALE.—Three-banded Italian Queens, bred from the best honey-gathering strains, that are also hardy and gentle. Untested queens, 75c; six, $4.25; 12, $8.00. Tested, $1.25; 6, $7.00; 12, $12. For select queens, add 25c each to above prices. Breeding queens, $3.00 to $5.00 each. For queens in larger quantities write for prices. Robt. B. Spicer,
Wharton, N. J.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10 C. W. Phelps & Son,
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QUIRIN'S Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G. Quirin,
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James McKee, Riverside, Calif

FOR SALE—Horsemint honey, also dark from Huckleberry. Put up in new 60-pound cans. Write for prices.
A. L. Krueger, New Ulm, Tex.

FOR SALE—Light extracted honey; two 60-pound cans to case, new cans, 8½ cts.; in 10 case lots at 8 cts. per pound, f. o. b. here.
H. G. Quirin, Bellevue, Ohio.

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I. J. Stringham, 105 Park Place, New York.

FOR SALE—Raspberry, Basswood No. 1 white comb, $3.00 per case; fancy, $3.25; 24 Danz. sec. to case, 9 cases to carrier. Extracted, 120-lb. cases at 9 cts
Wiley A. Latshaw, Clarion, Mich.

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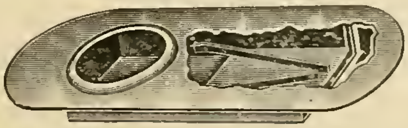

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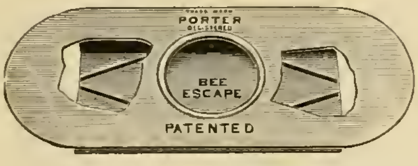

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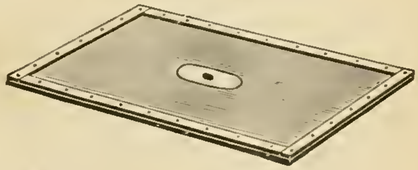

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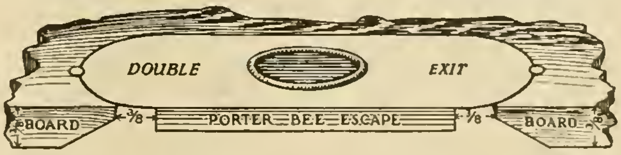

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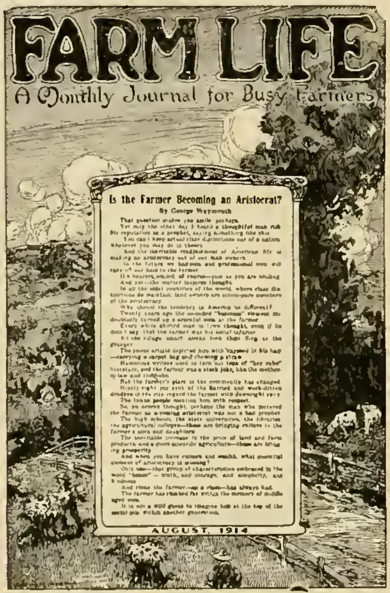
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CLOSING OUT SALE

—OF—

BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
"Pearce's Method of Beekeeping" (50c)	.30
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.30
Muth Bee-Veil (75c)	.60
Danzenbaker Bee-Smoker ($1 00)	.80
	$3.60

Or *all* the above in one order to one address *for only $3.00.* (The retail price of the bunch is $4.95.) Address,

GEORGE W. YORK, SANDPOINT, IDAHO

W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

EASTERN Beekeepers

If you are in need of shipping cases, cartons, honey jars, or anything in the supply line, let us quote you on them. No 25 jars with bronze cap, $1 60 a gross. Five gross, $1.30 a gross. Untested Italians queens, $1 00.

I. J. STRINGHAM
105 Park Place, New York
APIARIES :—Glen Cove, L. I.

STOP YOUR LOSSES

—BY USING—

Thale's Regulative Vacuum Bee-Feeder Feeds slow and fast. No robbing. No trouble. For sale by all leading supply dealers

H. H. THALE, Maywood, Missouri

CASH PAID FOR HONEY

We are constantly in receipt of inquiries for prices on honey. When you are ready to market your honey, you will find an army of purchasers ready to buy it by advertising your product in the Woman's National Weekly, which reaches 200,000 homes every week. Write for our Special Classified rates and free sample copy. **Dept. O C, Woman's National Weekly, University City, St Louis.**

FLORIDA For 10 Cents

Two months trial subscription to Florida's only Agricultural weekly. Tells facts. Answers questions about soils and crops Address FLORIDA GROWER, Box A, Tampa, Florida.

BINDER ATTACHMENT with corn harvester cuts and throws in piles on harvester in winrows Man and horse cut and shock equal with a corn binder. Sold in every State. Price only $20 00 with fodder binder. J. D. Borne, Haswell, Colo., writes: **"Your corn harvester is all you claim for it; cut, tied and shocked 65 acres milo, cane and corn last year."** Testimonials and catalog free, showing pictures of harvester. Address,

PROCESS MANF. CO., Salina, Kansas.

MARSHFIELD GOODS

BEE-KEEPERS:—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

PAGE-KENKEL MFG. CO.
Manufacturers
OF THE
"NONE BETTER"
BEE-KEEPERS' SUPPLIES

Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping-Cases. Brood-Frames, Separators, etc.
We invite your correspondence.

Guarantee—All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

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New London, Wis.

EARLY ORDER DISCOUNTS WILL
Pay You to Buy Bee Supplies Now

29 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.

LEAHY MFG. CO., 90 Sixth St., Higginsville, Missouri

Dittmer's Foundation

Is the **Comb Foundation** made to **suit the Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

Ask for more information; also prices and **FULL DISCOUNT** on all Bee-Supplies.

Gus Dittmer Company
Augusta, Wisconsin

PHARR WANTS YOUR ORDERS FOR QUEENS

Goldens and 3-Banded Italians

For twelve years we have asked for your orders and we have gotten all we could fill and sometimes more. But we have ever tried to serve you right, and will guarantee similar treatment in the future. Prices of Untested, $1.00; Tested, $1.50; Breeders, 3.00 to $5.00. Write for prices in large quantities.

2-frame Nuclei, queenless, $2.25 }
3 " " " 3.25 } All F. O. B. Berclair.
10 " colonies with queen 8.00 }

Orders booked now—delivery last of May or June

John W. Pharr, Berclair, Texas

Try My Bright ITALIAN QUEENS

This is what one customer writes:—

JOSEPHINE, TEX., June 16, 1913.
MR. M. BATES, Greenville, Ala.
Dear Sir:—I am sending you $0.00 for which please send me 12 Untested Golden Italian Queens. The queens you sent me are fine, and old bee rearers say they are the finest they ever saw. They have surely made a reputation here for you. Several men say they will order queens soon.
A. M. MORRISON.

I have other letters that say the same. Selected Untested, each 60c; Tested, each $1.25; 2-frame nuclei, each $2.50. I guarantee safe arrival and perfect satisfaction.

M. BATES, Route 4, Greenville, Ala.

ARCHDEKIN'S FINE ITALIAN QUEENS

Three-banded. Bred for persistent profitable production of honey. Prolific, hardy, gentle. The bee for pleasure or profit. One customer says, "Your queen soon had her 10 frames running over with bees that are hustlers. No disease. Satisfaction guaranteed. Orders filled promptly. Ready May 20.
Untested, $1.00 each; 3 for 2.75; 6 for $5.00; doz., $9.00. Select tested, $2 each.

J. F. Archdekin, R. R. 7, St. Joseph, Mo.

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-Page Catalog

Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

C. H. W. WEBER & CO.

CINCINNATI, 2146 Central Avenue, OHIO

DADANT'S FOUNDATION

DADANT'S FOUNDATION

WE MAKE IT GOOD

THE BEES MAKE IT FAMOUS

The Reputation of

DADANT'S FOUNDATION

Has been built on its merit

It is a Favorite with Beekeepers

BECAUSE

It is so well liked by the BEES

Whether it's a pound or whether it's a ton, every sheet is PERFECT

Satisfaction Guaranteed in Every Way

DADANT'S FOUNDATION

DADANT & SONS,

HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

OCTOBER 1914

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AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec14" on your label shows that it is paid to the end of December, 1914.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 5 lines accepted.

DISCOUNTS:

3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 23d of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD

Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913

Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.
STILLWATER, Oct. 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.

(Signed) PROF. E. C. SANBORN,
State Entomologist.

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens. Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n
ANTHONY BIAGGI,
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

$ 2 $ A MONTH

buys a Standard Typewriter your choice, Late Style Visibles, Back Spacer, Tabulator, Two-Color Ribbon. Every modern operating convenience. My prices lower than other cash prices Perfect Machines—Fully guaranteed. Ask for Special Five Days Free Trial Offer.

H. A. SMITH
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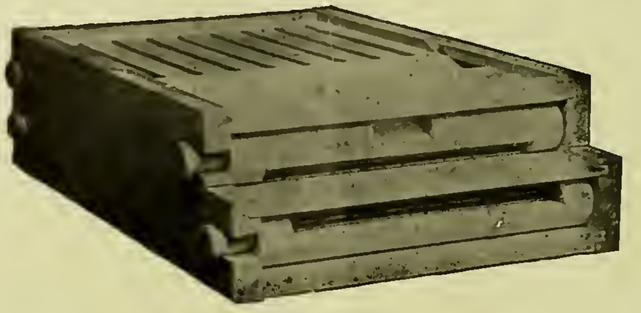
FEATURES OF ADVANTAGE OF THE

ROLLER ENTRANCE BOTTOM BOARD



1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.
2. It controls the mating of the queen so that mismating is prevented.
3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position.
4. It sifts automatically undesirable drones out of the hive, and cages them in the drone trap.
5. It permits ample ventilation at the height of the honey-flow.
6. It can be instantly closed when moving bees in and out of cellars or from one yard to another.
7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.
8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.
9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.
10. It is adjustable to make a shallow bottom for summer and a deep one for winter.

It contains many other valuable features which will be apparent to any beekeeper upon investigation, and if it is once tried it will always be used.

8-frame size, $2.00; 10-frame size, $2.50. Italian Queens, Breeders, $10 to $25.

Nothing sold under $10.

CHAS. G. SCHAMU
INVENTOR AND MANUFACTURER **Box 48, LIVERPOOL, NEW YORK**

PERFECTION IN WAX RENDERING

Has been reached by our process. Ship us **comb and cappings,** and secure highest returns. Write for prices and full information.

THE FRED W. MUTH COMPANY
"The Busy Bee Men"
204 Walnut Street **Cincinnati, Ohio**

Comb and Extracted Honey Wanted

TENNESSEE-BRED QUEENS

42 years' experience in queen-rearing—Breed 3-band Italians only

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested.........	$1 50	$ 7.50	$13.50	$1.25	$ 6 50	$11.50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select Untested	2.00	8.50	15 00	1.50	7.50	13.50	1.25	6.50	12,00	1.00	5.00	9.00
Tested............	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested....	3.00	16 50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Capacity of yard 5000 queens a year—Select Queen tested for breeding, $5

The very best Queen tested for breeding, $10. 300 fall reared tested Queens ready to mail, $2.50 to $10 each.

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed.

John M. Davis, Spring Hill, Tenn.

CEDAR WOOD

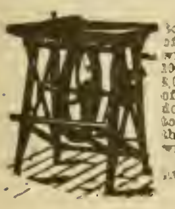
Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.
J. C. Frohliger, Berkeley, Calif.
Greater San Francisco

Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery



Read what J. I. Parent, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter 50 chaff hives with 7-in cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
995 Ruby St., Rockford, Ill.

Please mention Am. Bee Journal when writing.

Try My Famous Queens

From Improved Stock.

The best that money can buy: not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

Bred in Separate Yards

Untested, one, 75c; 6, $4.25; 12, $7.50; 25, 14.25; 100, $50. Tested, one, $1.50; six, $8.00; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

QUEENS of MOORE'S STRAIN of ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.

Untested queens, $1.00; six, $5.00; 12, $9.00.
Select untested, $1.25; six, $6.00; 12, $11.00.
Safe arrival and satisfaction guaranteed.

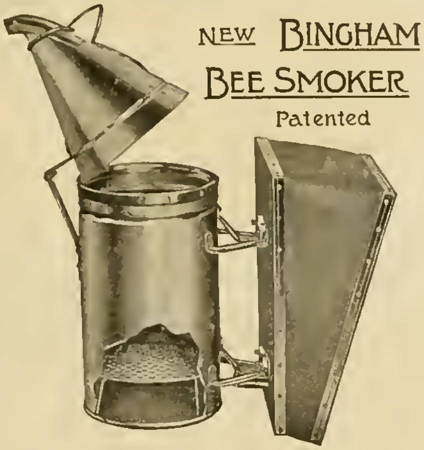
Circular free **J. P. MOORE,**
Queen-breeder Route 1, Morgan, Ky

ARE YOU GOING TO BUY LAND?

If so, get a copy of our Journal first. It has lands advertised in it from nearly every State in the Union, so that you can find just what you want. It reaches 67,000 readers each issue. Advertising rates 2c per word. Send 20c for six months' trial subscription. It will be stopped at the end of six months.

Farm and Real Estate Journal
Traer, Iowa

Bingham Bee Smoker



Nearly Forty Years On the Market

The original bee smoker was invented and patented by Mr. T. F. Bingham in 1878, 1882, 1892 and 1903. The Bingham Smoker is up to date, and the standard in this and many foreign countries. It has recently been improved, and is the all-important tool of the most extensive honey producers of the world. No other invention in apiculture has been so important, as little could be accomplished without the bee smoker. For sale direct or at your dealers. Postage extra.

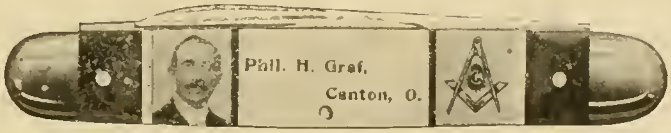
Smoke Engine	4	inch stove.	Weight	1¾	pounds.	$1.25
Doctor	3½	"	"	"	1⅝	"	.85
Conqueror	3	"	"	"	1½	"	.75
Little Wonder	2½	"	"	"	1	"	.50

Two Largest Sizes With Hinged Cover

A. G. WOODMAN COMPANY

Grand Rapids, Michigan

BEE-KEEPER'S NOVELTY POCKET-KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size. We have succeeded in getting this knife made in lots from genuine car-van steel. It is especially well tempered and keeps its edge remarkably. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given Free as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

Untested Italian Queen-Bees

OUR STANDARD BRED
6 Queens for $6.00;
3 for $3.50; 1 for $1.25
American Bee Journal, Hamilton, Illinois

"Falcon" QUEENS

Three-band and Golden Italians, Caucasians and Carniolans

Untested, July 1st to Oct. 1st, one, $ .85; six, $4.50; twelve, $ 8.50
SELECT Untested, July 1st to Oct. 1st, one, 1.00; six, 5.50; twelve. 10.00
Tested, $1.50 each. Select tested, 2.00.

All queens are reared in strong and vigorous colonies, and mated from populous nuclei.
Instructions for introducing are to be found on the reverse side of the cage cover.
A full line of bee supplies and foundation manufactured by us at Falconer, N. Y.
Write for samples of our foundation and Red Catalog, postpaid.

WESTERN DISTRIBUTERS:—C. C. Clemons, Bee Supply Co., 128-130 Grand Ave., Kansas City, Missouri

OTHER DEALERS EVERYWHERE

Red Catalog, postpaid **"Simplified Beekeeping," postpaid**

W. T. FALCONER MFG. CO., - FALCONER N. Y.

Where the good bee hives come from

HONEY LABELS

Owing to the many enquiries we have had for Honey Labels, we have put in a line of these for the convenience of our readers.

Send for catalog, giving samples of labels with postpaid prices. We also list **Envelopes and printed Letter Heads.**

American Bee Journal, Hamilton, Illinois.

SPECIAL OFFER

Will sell 300 choice tested Italian Queens at 85c each. These are the very best queens in our 3 apiaries, and will guarantee every queen to give entire satisfaction. If not satisfied within one year we will refund your money.

FRED LEININGER & SON
Delphos, Ohio

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years. In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority.

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL — Breeding. — Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

AN EXTRAODINARY OPPORTUNITY

Good for 30 days only

The **AMERICAN BEE JOURNAL** has arranged with the leading magazines for a series of very special BARGAINS IN MAGAZINE SUBSCRIPTIONS, good for 30 days only. The volume of subscription business has grown enormously within the last few years. Most people like to subscribe in November and December. The congestion in attempting to handle almost a year's business in a month or two is a very serious problem. A remedy has suggested itself. Why not induce our readers to subscribe early, thus reducing the complaints and avoiding the rush? It is worth something to accomplish this, and the following money saving offers are the result. The thrifty will profit. The rest will keep us busy enough in December. Here are all the worth-while magazines. Every club on this page will positively cost more this fall. Buy now and save from 25 to 100 percent. This is your opportunity. Take advantage of it by sending your oder TODAY.

American Bee Journal	Regular Price, $1.00	Our Special Price
To-Day's Magazine	Regular Price, .50	for 30 Days only
McCall's Magazine	Regular Price, .50	$1.60
	Total value, $2.00	Thereafter $1.70

American Bee Jouraal	Regular Price, $1.00	Our Special Price
Home Needlework	Regular Price, .75	for 30 Days Only
Housewife	Regular Price, .50	$1.65
	Total value. $3.25	Thereafter $1.85

American Bee Journal	Regular Price, $1.00	
Ladies' World	Regular Price, 1.00	Our Special Price
Housewife	Regular Price, .50	for 30 Days Only
McCall's Magazine	Regular Price, .50	$2.10
	Total value, $3.00	Thereafter $2.50

American Bee Journal	Regular Price. $1.00	Our Special Price
Mother's Magazine	Regular Price, 1 50	for 30 days Only
Pictorial Review	Regular Price, 1.00	$2 35
	Total value, $3.50	Thereafter $3 00

Auerican Bee Journal	Regular Price, $1.00	Our Special Price
Modern Priscilla	Regular Price, 1.00	for 30 Days Only
Pictorial Review	Regular Price, 1.00	$2.35
	Total value, $3.00	Thereafter $2.70

American Bee Journal	Regular Price, $1.00	Our Special Price
Ladies' World	Regular Price, 1.00	for 30 Days Only
Mother's Magazine	Regular Price, 1.50	$2.35
	Total value, $3.50	Thereafter $2.75

*Everybody's Magazine	Regular Price, $1.50	Our Special Price
*Delineator	Regular Price, 1.50	for 30 Days Only
American Bee Journal	Regular Price, 1.00	$2.85
	Total value, $4.00	Thereafter $3.25

* Both magazines in this special club must go to same address.

American Bee Journal	Regular Price, $1.00	
Pictorial Review	Regular Price, 1.00	Our Special Price
Ladies' World	Regular Price, 1.00	for 30 Days Only
Modern Priscilla	Regular Price, 1.00	$2.85
	Total value, $4.00	Thereafter $3.45

American Bee Journal	Regular Price, $1.00	Our Special Price
McClure's Magazine	Regular Price, 1.50	for 30 Days Only
Woman's Home Companion	Regular Price, 1.50	$2.85
	Total value, $4.00	Thereafter $3.25

American Bee Journal	Regular Price, $1.00	Our Special Price
American Magazine	Regular Price, 1.50	for 30 Days Only
McClure's Magazine	Regular Price, 1.50	$2.85
	Total value, $4.00	Thereafter $3.15

American Bee Journal	Regular Price, $1.00	
McClure's or American	Regular Price, 1.50	Our Special Price
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Watertown, Wisconsin, U. S. A.

AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., OCTOBER, 1914

Vol. LIV.—No. 10

EDITORIAL COMMENTS

In Canada

In compliance with an invitation to attend the convention of beekeepers of the province of Quebec, in Montreal, Nov. 11 and 12, wife and I have decided to make a trip into Canada early in November, going as far as the city of Quebec and calling upon a few beekeepers along the way. We anticipate a good time, for we have many friends to meet.

A few days later, I hope to attend both the Iowa meeting at Ames and the Illinois meeting at Springfield. All the above-named conventions will be again mentioned in our November issue, in time to inform those who may wish to attend. There is nothing better than these meetings, both in the benefit from information gained and the cheerfulness of pleasant acquaintances formed.

Wax-Producing Organs

The picture on our cover page is a greatly magnified photograph of the above-named organs of the worker bee, made by our learned friend, Mr. E. F. Bigelow, of Sound Beach, Conn. In order to show the details, we herewith display one of the organs as given in the microscopic studies of Count Barbo, of Milan, Italy, drawn by Clerici, and published in the 70's by the Italian Beekeepers' Association. It is taken from our Revised Langstroth.

The ventral plates of the abdomen of the worker bee consist of six pieces of scales, sliding upon each other as do the rounded dorsal scales. The first one near the thorax is small and rounded, the last one at the tip of the abdomen is heart-shaped. The other four are shaped like the accompanying cut. The two upper pentagonal surfaces are transparent and wax yielding, and are covered by the segment immediately above them. The lower part, covered with hair, forms the segment which covers the next pair. This is of hard, horny "chitine," as are the outlines which surround the upper organs.

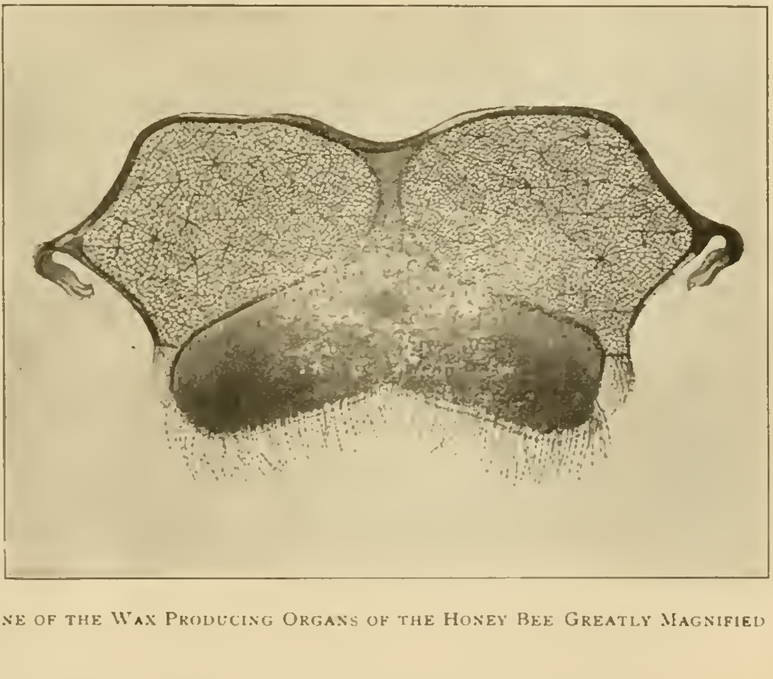
The two upper " surfaces are slightly sunk, and are the moulds on which the wax scales are formed from the secretion which, as Latreille has shown, passes through them in a liquid state, from glands situated beneath. In the queen and drone these disks are absent."

The explanation in quotation marks is borrowed from Thos. W. Cowan's "Honey Bee."

Walter S. Pouder Retires

It is with regret that we inform our readers of the retirement of Mr. Walter S. Pouder, of Indianapolis, Ind., from the bee and honey business. This move is caused by the ill health of Mr. Pouder, who will aim to recuperate by retirement.

Years of association with Mr. Pouder have taught us to love him not only as a thoroughly upright and excellent



One of the Wax Producing Organs of the Honey Bee Greatly Magnified business man, but also personally as an individual.

May your retirement, Mr. Pouder, give the beekeeping world the chance to learn of your rapid improvement. May our loss be your gain.

The business of Mr. Pouder has been disposed of, and for the present at least will be run under the same name as formerly.

Wintering—Absorbents Over the Brood-Chamber

There is some opposition, among our writers, to the use of moisture absorbents over the brood-combs in cold weather. Several arguments are used which may appear plausible at first sight. The first one is that, in a state of nature, bees usually have the opening of their tree-trunk or gum below the colony, and that they carefully close up with propolis and render impervious to moisture all the walls of their abode.

This is only circumstantial evidence. The bees take the tree hollows as they find them, and must necessarily close them against all enemies, except in such part as they can easily defend. To accept for granted that it is impossible to improve upon nature in any case would be to agree that the wild creatures such as deer, buffalos, grouse and quails are safe in the wildest and deepest snow storms. Yet we all know that there are times when thousands of these creatures are killed by the rigors of winter and deep snow.

We are also told that a cushion of absorbents over the cluster of the colony acts as a ventilator, and is therefore injurious by creating a current of air. By the same token the man who sleeps under a woolen blanket would be also injured by the porous condition of his covering. Yet we all know that a woolen cover, porous though it be, is much preferable to an impervious cover such as a rubber-lined blanket.

To pass judgment upon the comparative advantage of different modes of wintering, it is necessary to bring the bees through very severe weather. Almost any kind of management will do in mild winters. The winter of 1884-5, which was one of the most severe that we have ever seen, owing to its great duration, its low temperature and the extreme violence of its polar winds, gave us an opportunity to test, comparatively and upon a large scale, the different ways of wintering out-of-doors.

We had at that time some 80 chaff hives distributed in four apiaries, with a few double-wall hives without chaff and a number of single-wall hives with but little protection. We did not then believe in absorbents, but as we used oil cloths over the frames, we placed cushions filled with chaff over the brood-chamber, to keep the heat from escaping through the impervious oil cloth. However, some of our cloths had been damaged by the bees and had holes in them. We had neglected to make any changes in them, and this is what gave us the occasion to make a comparative test, without foresight or intention on our part.

At the end of a long period of excessive cold which carried us far into the month of March, we made an examination of the colonies. Most of those which had impervious ceilings had died from the excess of moisture which had condensed over and around them, even in the chaff hives. Each of those which had room for the escape of moisture through the holes in the cloths into the mats above was safe, except in a few cases of single-wall hives. The greater the space through which the moisture could escape, the safer and healthier the colony was. This was conclusive. It was not an experiment on two or three colonies, but on several hundred.

It is true that a large amount of ventilation below does help to carry away the moisture, but it is at the expense of warmth and a much greater amount of stores has to be used. We have seen colonies winter without any bottom-board at all in box-hives and gums, the entire space below the combs being open. But for economical wintering, a reasonable amount of lower ventilation and a heavy cushion of absorbents, preventing drafts, but allowing the escape of moisture, as does a woolen blanket over a man's body, give the best results. It is true that in most winters the chaff hive will protect a strong colony so that no freezing temperature will surround the cluster. But it is well to be ready for the worst, and in the worst winters the best chaff hives are not proof against freezing temperature.

As a matter of course, moisture absorbents are not the only requirement for safe wintering. The food supply must be ample and of good quality. No amount of protection will save a colony supplied, in a long winter without flights, with grape or apple juice or honey-dew as stores. Our people tested this to our sorrow. In both the winters of 1910-11 and that of 1911-12 our bees had honey-dew. In preparing for the first of those winters, my sons removed most of the honey-dew and replaced it with sugar syrup or honey The winter was very mild, and the bees that were left with the honey-dew stores came through about as well as the others. This encouraged them to save all the trouble of extracting and feeding back the following winter. But it was a hard winter and the loss was tremendous. We live and learn.

Wintering Bees in Iowa

On our desk is another bulletin by the indefatigable President of the Iowa State Beekeepers' Association, our friend Pellett. It bears the above title and gives very good methods of wintering, quoting some of the best authorities in the State. However, we must criticize the opinion emitted in in this bulletin by our old friend Dr. Bonney, who does not believe in the "absorbent cushion" over the brood-combs, when using chaff hives. Had Dr. Bonney been with us when we experimented with 80 chaff hives in the rigorous winter of 1884-5, he would alter some of his arguments.

The bulletin is finely illustrated, and contains 20 pages. It is known as No. 22 of the Agricultural Extension Department of Ames, Iowa. Let the good work go on.

Feeding With Sugar Syrup

In the September number, following a contribution by Mr. McKinnon, we gave Doctor Miller's views and promised our readers a study of this matter and the expression of former writers. For this we have gone back into the Journals as far as 1879 and have examined different works on modern apiculture.

Quinby, one of the oldest and practical authors in modern beekeeping, said: "If no money is at hand, sugar may be used instead; add a little water, boil until near the consistency of honey, and skim it; when cool enough, use the same as honey." In his later work, "New Beekeeping," he wrote: "Add one quart of water to 3 pounds of sugar, bring to a boil and skim." This is 1½ to 1.

Heddon used 3 pounds of water to 10 pounds of sugar with a teaspoonful of tartaric acid. This is 3, 3 to 1.

N. P. Allen, in 1880, advised using 2 pounds to 1, adding a little cream of tartar or a little vinegar. At different times, both before and after, dozens of others recommended the same thing.

G. H. Ashby, in the American Bee

Journal for December, 1888, said: "I use 2 parts of sugar to 1 of water and never had it granulated. **If hard water is used, acid must be added to correspond with the hardness of the water.** Any confectioner can tell you all about it. Some do not need these instructions, but I am satisfied that a good many do."

Here, perhaps, is the reason why there is such difference in the reports as to the crystallization of the sugar. Ashby's suggestion is worthy of note. We have ourselves practiced feeding 2 to 1 for over 40 years and only once have seen any loss from crystallization. Our Ontario correspondent, Mr. Byer, in the September issue advises the same proportion. Mr. Byer is an experienced apiarist and practices feeding regularly. But let us return to an examination of authorities.

C. N. White, of England, advised the use of 12 pounds of sugar for each gallon of water (1½ to 1) for spring feeding and of 24 pounds of sugar per gallon of water (3 to 1) for fall feeding. He said, following Langstroth's advice: "The reason for this difference is that, in the spring, the bees leave the hive for water with which to thin the food they, in their capacity of nurse bees, prepare for the grubs, and when syrup is given with a good proportion of water these journeys to the pump are rendered unnecessary, while in the autumn, unless syrup about the consistency of honey is supplied, the bees will have considerable trouble in getting rid of the superfluous moisture in order to seal it over."

Of all our noted writers, the one who most incessantly repeated exactly the same instructions is Doolittle. In 20 years, in his contributions to the American Bee Journal and in reply to enquiries, he explained, more than 15 different times, how he had the syrup crystallize in the feeders and in the hives, and now he entirely stopped it by using 5 pounds of honey for every 45 pounds of syrup made of 15 pounds of water and 30 pounds of sugar.

The Roots advise equal quantities of sugar and water. They say that "it is better to feed the syrup thin than thick, for then the bees will ripen it, and when syrup is thickened and ripened by the bees it will not granulate, but make the finest and best food." They acknowledge, however, that if feeding has been deferred until quite late it may be advisable to use 4 parts of sugar and 3 of water.

CAVE
MAQUOKETA IOWA

Beautiful Scenery at Maquoketa, Iowa, Where the Gallaghers Live

Dr. Miller's way formerly was to prepare a syrup that approached the consistency of honey, 5 to 2, with a teaspoonful of tartaric acid for every 20 pounds of sugar. In his "Fifty Years Among The Bees" he says he would prefer the same syrup if he were to feed late in September or October. But for August or early September feeding he prefers the method given by him in our last number.

It is really best to feed early, but in countries where a fall flow is expected, the apiarist often delays feeding in the hope that the bees may yet gather enough. Such was the case this year, in many localities.

All authorities are agreed that slow feeding is preferable to fast feeding, because there is more chance for the bees to invert the sugar by its mixing with saliva in their stomachs. The syrup ripens better. But even the proportion of 2 to 1 makes a thinner syrup still than well ripened honey.

If we are feeding for winter supply, slow feeding, on the other hand, will cause the bees to breed and build combs and a considerable amount of syrup will be consumed in so doing. Some benefit may be expected from this extra breeding, if the quantity supplied is ample. Thin syrup, stored in the cells in cold weather, may eventually sour in them.

When feeding must be resorted to in cold weather, the best food to give is candy. The recipe is simple: Add soft water to sugar and boil slowly

BURTS CAVE
MAQUOKETA IOWA

Another Maquoketa Scene

until the water is evaporated. Stir constantly so that it will not burn. To know when it is done, dip your finger first into cold water then into the syrup. If what adheres is brittle to the teeth, it is boiled enough. Pour into shallow pans, slightly greased and, when cold, break into pieces of suitable size.

Sugar candy is fed over the brood combs of a colony. It is food in its most concentrated form and may be used both out-of-doors and in the cellar. There is no danger of diarrhea when the colonies are supplied with this or with thick syrup.

Unripe honey or thin nectar is sure to prove injurious to the bees if they are compelled to winter upon it. According to some authorities, the nectar of blossoms may contain as much as 80 per cent of water, when fresh harvested. This would mean 5 parts of water to 1 of sugar. We will some day discuss this matter, for there is undoubtedly a great difference in the thickness of the nectar at different times, according to the atmospheric and soil conditions.

To sum up the experience gathered, give your bees thin food in the summer, thick food in the winter. If you fear crystallization in the combs, add 10 per cent of honey or a little tartaric acid. Use soft water.

A discussion of this subject will be welcomed by the Journal.

Beekeeping Information in the Dailies

The St. Louis Post-Dispatch of Sunday July 19, contains a whole page devoted to the study of bee-life, borrowed from "The Courtship of Animals," by W. P. Pycraft, of London. It is a very interesting description of the natural history of the honey-bee, and aside from a few minor inaccuracies, is correct. The cuts have evidently been borrowed, perhaps in a roundabout way, from American authors. We congratulate this great daily for the space thus granted to bee-culture.

MISCELLANEOUS NEWS ITEMS

Fall Meeting in Connecticut.—The fall convention of the Connecticut Beekeepers' Association will be held in the old Senate Chamber, State Capitol at Hartford Saturday, Oct. 24. The morning session will be devoted to an informal gathering, payment of dues, etc.; the afternoon session to regular business, report of Connecticut Fair Committee and addresses.

It is expected that important action will be taken at this meeting relative to the establishment of an apiary at the Connecticut Agricultural College, for which the association has been working for several years. The Program Committee announces the following:

Mr. O. F. Fuller, of Blackstone, Mass., president of Worcester Beekeepers' Association and originator of the famous "Fuller candy" for winter feeding, will address us on "Experiments with Bee Foods," demonstrated, and "Rearing Queens in the Brood-Chamber with a Laying Queen."

Those who failed to hear Mr. Fuller at Amherst on June 12, last year, should not miss this opportunity. The remainder of the program follows: L. C. Root, (subject to be chosen). W. C. Rockwell, "Signs of a Good Queen." John Thorret, "Wintering." Question box, etc.

L. Wayne Adams, *Sec.*

◆

Northern Illinois and Southern Wisconsin Convention.—The annual meeting of the Northern Illinois and Southern Wisconsin Beekeepers' Association will be held in the Court House in Rockford, Ill., on Tuesday, Oct. 20, 1914. All those interested in bees are invited to attend.

B. Kennedy, *Sec.*,
2507 W. State St., Rockford, Ill.

◆

The Gallagher Apiary. Arriving at the pretty and lively city of Maquoketa, Iowa, on the evening July 6, I repaired to the hotel, and after cleaning away the grime of dust and cinders with a good bath, I ate a hearty supper and made some enquiries. I had never met Mr. Gallagher, but I had often corresponded with him, so I knew he was an old resident. His business is that of a jeweler. I do not wish to throw showy bouquets, but I can truly say that I have found out by long acquaintance with beekeepers that a successful jeweler always makes a good honey producer. And why? Because, as Heddon used to say: "Our business is a business of details." There is no business more composed of fine detail than the jeweler's business, especially if he is also a watch and clock repairer. He knows that the least little derangement will make a clock go wrong. That is why I repeat: A beekeeping jeweler is a successful beekeeper.

In answer to my telephone call, the reply came in a pleasant voice: "Glad to hear that you are here. My boy will call for you in a few minutes." Indeed, the *boy* came, with a big automobile, but he turned out to be a bright young man of 26. To my remark that he was a pretty big "boy," he laughingly replied, "I am the kid." It was only a few blocks to the Gallagher home, and I spent a very pleasant evening. As it was already dark, the visit to the bees was put off until morning.

Mr. Gallagher has solved the problem of keeping a large number of colonies on a small plot of ground. His 165 colonies are located on a back lot 60 feet by 110. But he manages to keep there also a very good vegetable garden, where lettuce, parsnip, cabbage, celery, peas, beans, strawberries, asparagus, etc., are grown. He has also there

A Part of the Gallagher Apiary Which Occupies a Space 60x60 Feet a chicken house, from which the chickens are now excluded for the benefit of the bees. In this house the bees are wintered, as I will explain farther on. The bees are actually occupying only a a space 60x60 feet. They do not annoy the neighbors, for they are all of a peaceable strain of Italians. They have no European foulbrood for the same reason, although this disease is in the vicinity.

The hives are 8 frames. To those who are aware of my predilection for very large hives, I will say that this is perhaps the only stumbling block in Mr. Gallagher's path. His bees swarm more than he likes. But he knows how to produce honey, comb honey, and get his sections well filled. When he puts on a second case, he usually puts it on top of the first. When the first is nearly sealed, he shifts them. He does this from time to time as occasion requires. As a result, he secures most of his sections well sealed. He rears his own queens from his best stock. We don't do that. We don't think we can spare the time. But I believe it pays, for if you breed from your most prolific, most active, and most peaceable stock, you will be likely to secure prolific, active and peaceable bees.

We think 100 colonies is enough for a locality. Either the vicinity of Maquoketa is better than our own for pasture or the smaller size of the colonies makes a larger number possible. Mr. Gallagher had a fair crop of clover in the supers. It is true that they have had very good weather and plenty of rain, while in our own locality the absence of rain had dried everything.

Mr. Gallagher clips all his queens, as do most of the apiarists who are unable to be always there when the bees swarm. His method of clipping is his own. He does not pick her up. With a pair of jeweler's tweezers in the left hand, he catches the queen by one of her wings while she stands on the comb. Pulling a little on it causes her to grip the comb and try to pull away. Then with manicure scissors in the right hand, he cuts the projecting wing. This he illustrated for me on a worker-bee with great expedition, showing that he was an expert at the job.

Now as to wintering. His cellar has a hot water furnace in it, and is too warm. The chicken house is close to the apiary, and our friend hit upon the plan of making it a winter repository. This was done with trifling expense. The inner walls were lined with 4 or 5 inches of fine straw, held in place with wire netting, so as to make a non-conducting siding. About 2 feet of the same material is used overhead. For ventilation, two stove pipes are set up in the upper packing and draw off all the moist air into the space under the roof.

THE GALLAGHER HOME AT MAQUOKETA

THE GALLAGHER CHICKEN HOUSE USED TO WINTER THE BEES.—(See article.)

Mr. Gallagher said that often in very cold weather the underside of the roof was coated with frost produced by the moist air arising from the cluster. For the entering air, he relies simply upon the porosity of his straw packing. During the past five or six winters, he has thus wintered some 150 colonies with insignificant loss. The hives are brought in without their cover and piled along, in rows, leaving just a passage between the rows for inspection purposes. This is the cheapest winter repository I have ever seen.

After our trip to the Coverdale farm, mentioned in the August number, Mr. Pellett, the inspector, joined us. We enjoyed the hospitality of the Gallaghers, and were shown the surroundings in an automobile evening tour. We visited some remarkable grottoes, about 10 miles away. I had no idea that such specimens of natural wonders could be found in Iowa.

The growing of sweet clover is given an impetus throughout the country, but more so in that part of Iowa, owing to a number of farmers following the example given by Mr. Coverdale. The use of this plant in agriculture is going to prove a boon to the beekeeper throughout the land.

◆

A New Uncapping Knife.—Mr. Stephen Anthony, of New Zealand, sends us the translation of the description of a rotary uncapping knife invented in Russia, by A. M. Loginof. The invention is based upon that of the foot-power dental drill, a steel disk being used for blade. We do not believe this invention would appeal to those who have used the steam-heated Bingham knife. However, it shows that human ingenuity is at work in bee-culture, around the globe.

◆

Illinois State Meeting.—The 24th annual meeting of the Illinois State Beekeepers' Association will be held at the State House in Springfield on Thursday and Friday, Nov. 19 and 20.

Mr. N. E. France, of Wisconsin, will be with us. His subject will be "Short Cuts." Prof. J. G. Mosier, of the University of Illinois, will speak on the subject of "Sweet Clover." Mr. C. P. Dadant, of Hamilton, Ill., and Dr. E. F. Phillips, of Washington, D. C. Subject, "Temperature and Moisture of the Hive in Winter." Come prepared to help make it a good meeting.

JAS. A. STONE, *Sec.*

◆

The New Jersey Summer Meeting.—The summer meeting of the New Jersey Beekeepers' Association is growing in interest and attendance, which promises well for the improvement of beekeeping within the State.

On July 8, more than 70 people gathered from all parts of the State to make new acquaintances and renew the old, and to learn whatever was to be offered by the beginners, and, no less, by the veterans.

Mr. Robert B. Spicer, at whose queen-rearing yards, located among the mountains of northern New Jersey, and about two miles from Wharton, the meeting was held, gave talks and practical demonstrations on queen-rearing. Many beginners were heard to remark upon the value which these demonstrations would be to them. Without reflection upon the professionals, it may be said the association is composed largely of "back-lotters," who contribute in no small degree to the interest and success of the meetings of the association, and it is safe to count upon always meeting a large representation of the faithful.

Mr. Spicer provided a substantial lunch which was thoroughly enjoyed, under the trees. President C. H. Root gave a talk upon his special hive cover, "which never warps, cracks nor blows off." Mr. Hornor, of Philadelphia, also contributed a paper, after which there was a general informal discussion. Secretary (and inspector) Carr made a photograph of those present, which was very successful.

The spirit of sociability which pervaded the meeting added greatly to the enjoyment, and mention was frequently made of the next meeting. The annual meeting will be held in December at New Brunswick, in the Entomological Building of the New Jersey State Agricultural Department. C. D. CHENEY.

Lyndhurst, N. J.

◆

Long Idea Hives.—Won't you please publish a description with your opinion of the "long idea" hive as used in Europe? EUGENE BAKER.

Los Angeles, Calif.

The name "long idea" is essentially American. In Europe these hives are called "horizontal," because they are single-story hives, without supers. The hives upon which supers are used are called "vertical" in contradistinction.

The systems of apiculture mostly in vogue throughout the world locate the brood-nest in one body and the storage apartment or supers in one or more additional bodies, placed over the brood-chamber. Differing from these leading methods are two extremes, the horizontal hive system without supers, and the sectional hive system in which even the brood-chamber is divided into two or more stories. Among the latter are the Heddon and Danzenbaker hives.

The horizontal hive, of which the Layens is the main type, is a hive with deep frames, usually deeper than long, and containing from 16 to 30 frames. The Layens frame measures 13⅛ inches in width by 16⅛ in depth, outside. The indside measurements are 12⅜ by 14¾. These measurements are taken from Bertrand's "Conduite du Rucher" (Management of the Apiary).

It is self evident that sectional hives must have very shallow frames while horizontal hives must have very deep ones. Hence the deep frames used by Layens. The principal claims for these hives are:

1. Their simplicity. There is only one kind of frame and one kind of body in the apiary. The colony spreads out horizontally, and more frames are added as necessary. When the honey is extracted, every frame may be removed which does not contain brood. With the help of dummies, the hives accommodate the smallest as well as the largest colonies.

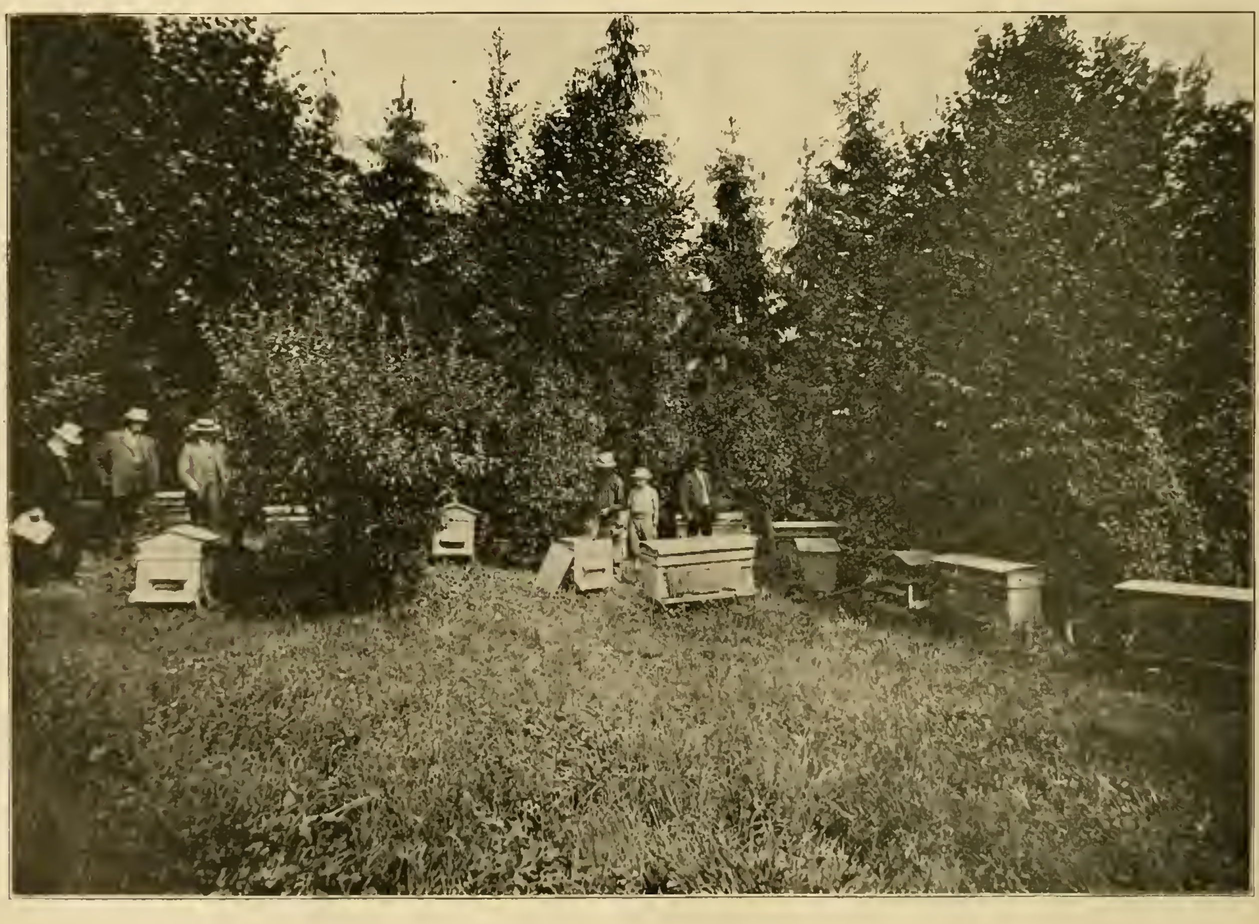
2. Swarm prevention. The brood may be removed from the entrance and empty combs placed there so that the field workers have to pass over or through them to reach the brood-nest. It is claimed by the supporters of this method that this is one of the best preventives of swarming. It is true.

3. Better wintering. Those who use deep frame hives are unanimous in saying that the bees winter better in them than in shallow hives, because they have more honey above the cluster.

The disadvantages are as follows:

1. The single story hive does not permit of comb-honey production. We have ourselves tried the placing of sections in side frames and almost invariably the bees have failed to fill the lower part of the sections, and have soiled them much more than sections located above the brood-chamber.

2. It is much more difficult to remove deep combs from a brood-chamber than shallow ones. Those who are ac-



EXPERIMENTAL APIARY OF MR. BOUCHARD IN BURGUNDY.—NOTE THE HORIZONTAL "LONG IDEA" HIVES ON THE RIGHT

A Small Group of Those in Attendance at the Clarinda, Iowa, Field Meet Aug. 12
1. Carl Anderson. 2. Dr. E. L. Crowson. 3. M. E. Darby. 4. E. J. Baxter. 5. C. B. Baxter. 6. H. C. Hartman. 7. O. E. Ostrus. 8. Thos. Parker. 9 T. E. Ostrus. 10. W. D. Foley. 11. Harold Ostrus. 12. Oscar Ostrus. 13. G. M. Shaver. 14. J. L. Strong.

customed to handling them count this a worthless argument, but all novices readily see the difference.

3. It is more difficult to extract the honey from deep combs than from shallow super frames. The combs are heavy and more tiresome to handle. More stooping is required.

4. When removing surplus honey for extracting, the hive must necessarily be kept open quite a while. This gives occasion for robbing, if the crop is at an end. When supers are used, the super may be removed, the hive closed at once and the bees shaken out in front. A bee-escape, which may be used also under a super, is out of the question with the one story, horizontal hive.

The name "long idea" was given to the first horizontal hives offered in this country, in 1872, by Gen. Adair, of Kentucky. He had named his hives "new idea," but the change was popularly made in some way to what the "idea" represented. The champion of "long idea" hives in this country is the old veteran soldier and practical beekeeper, O. O. Poppleton, of Florida. His hives hold 24 frames 11½ by 11½ inches, inside measure. In the American Bee Journal of April 13, 1899, in reply to objections made to this style of hive, Mr. Poppleton wrote:

"The discussion over these hives occurred when I was first starting my apiary in Iowa. After trying both styles for a year or two, I adopted the long single-story hive and still use it, not having a single double-deck hive in my apiaries. I used about 500 double-story hives for two years in Cuba, and was glad to return to my own style..........Let me review Mr. Doolittle's objections very briefly. I can work a single-story hive much easier than a double story. The extra depth of my frame and a little higher stand makes the top of the hive the same height from the ground as the top of a two-story Langstroth hive. I shake my bees inside, not on top of the hive, and avoid the trouble of crawling bees he speaks of. I used to be as successful as the average beekeeper in wintering my bees in northern Iowa, and I used the long hive entirely."

We have ourselves tried the "long idea" with the Quinby frames, and had at one time some 30 hives of this style with 20 frames each, which were equivalent to 30 frames of the Poppleton hive. We also had some 60 hives with 16 frames 11½ by 12 inside. But these were so arranged that we could also use supers on them. We finally returned entirely to the system of shallow supers which we use still.

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The Seventh Iowa Summer Meeting.—The series of summer meetings being held in Iowa do not lack in interest as the season advances. At some points the attendance is not as large as others, owing to the fact that the number of beekeepers in reach are less. At Clarinda on Aug. 12 the friends gathered at the apiary of J. L. Strong, who has kept bees in Iowa for nearly half a century. Nearly as many came from Missouri as from Iowa, and E. J. Baxter and son of Nauvoo, Ill., came all the way across the State to be with us. M. E. Darby, the State Bee Inspector of Missouri, and E. J. Baxter were the principal speakers, and entertained their hearers in an interesting manner with incidents of days that are past and friends who have passed on.

Bee diseases and other subjects were discussed for a time, and much pleasure was the result of the examination of the Strong apiary and apparatus.

The day was very pleasantly spent in informal discussion and in cultivating the acquaintance of the persons in attendance. Only one more of these summer meetings remains to be held. The photograph shows only a small part of those present at Clarinda.

Frank C. Pellett.

Atlantic, Iowa.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Beekeeping as a Vocation—Location

To Illinois Wife:—There is something to be learned by a visit to a large apiary; but don't count too much on it. If you dip in for yourself, with the aid of a good text-book on beekeeping and a bee journal, you will know more certainly whether or not beekeeping is a thing exactly fitted for you. Dadant's Langstroth ($1.25) and Root's A B C and X Y Z of Bee Culture ($2.00) are the leading text-books on bee culture. To either of these Dr. Miller's "Fifty Years Among the Bees" ($1.00) may serve as a supplement. It gives in detail his entire management for the year, making it more instructive than a number of visits would be. Either of these books can be obtained by sending the price attached to the American Bee Journal, Hamilton, Ill.

To give up another business to embark upon beekeeping with little or no previous experience would be a hazardous experiment. If there should be a failure of the honey crop in the first year—and such things do happen—one would be likely to wish very much that the experiment had not been tried. Much better it would be to begin beekeeping on a small scale as a side issue, continuing the previous regular business until such time as experience should warrant casting loose from other sources of income. For some will make a success of beekeeping and others a failure; and no one can tell in advance who shall be the successes, and who the failures. Neither can any one decide the question for himself by any amount of study or investigation without actually trying it on with the bees. Those, however, who find themselves fitted for the business will find a fascination and enjoyment in it entirely independent of the monetary reward obtained.

With regard to choosing a location, it is difficult to give anything but general advice. Right where you are is probably a good place to begin, and possibly to continue. In the North, white clover and basswood are the leading honey plants for the early harvest, and buckwheat and heartsease for the late harvest. Alsike and sweet clover are fine yielders where they are found in quantity. A paying crop may be obtained from any one of these plants alone; but, of course, there is a better chance for success where two or more of them are found in the same locality. Please remember that a bee's locality reaches out 1½ to 2 miles or more in every direction.

* * *

Moth and Combs

It is interesting and instructive to read what the Editor and Mr. J. L. Byer have to say about combs outdoors, pages 295 and 304. It may do no harm to tell how it is here, part way between the two places.

If a colony dies in the cellar in winter—it would no doubt be the same outdoors—it is a matter of certainty that sooner or later the combs left by the dead colony will become wormy. If left in the cellar, however, the progress of the miscreants will be very slow, and little damage will be done to the combs until some time in May or June. If taken outdoors the progress of the worms will be much more rapid; so we do not take them out until we are ready to give them in care of the bees.

If, however, combs have been left out over winter, and subjected to severe freezing, they will generally, although not always, pass through the summer without being touched by the moth. But they are never closed up so that the moth can gain no entrance, but left well ventilated. They would probably be still more secure against moth if entirely uncovered, only exposure to the rain would not be good for them. Very rarely do spiders make webs to keep out the moth.

The closer the combs are crowded together the better it seems to suit the moth, so we prefer to have combs unoccupied by bees always spread well apart.

* * *

The Smoke Method of Introduction

We have tried introducing queens by the Arthur C. Miller smoke method, only to find it a failure in every instance. Possibly our deep bottom-boards may account for the failures. It has been explained that the secret of the success of the plan is that under cover of the smoke the queen immediately rushes through the outer wall of bees into the center of the cluster, where she is safe. With 2 inches space between the floor of the hive and the bottom-bars she cannot readily do that, but must run to one side of the hive or the other before she can get up into the cluster, and she may run the full length of the hive to the back end.

On page 304, Mr. Byer gives his experience with the plan, and one colony which was particularly vicious "was given an extra hard smoking so as to be *sure* of results." In spite of the severe smoking the queen was killed. According to Editor Root, however, it may not have been in spite of, but because of, the severe smoking. In Gleanings in Bee Culture for Sept. 1, he says, page 657, "Oversmoking or undersmoking will lead to failure." He further says that "apparently we would better stick to the cage plan for a while yet."

* * *

Overcoming Stubborn Queenlessness

Once in a while there happens a case of a queenless colony which is so stubborn about accepting a queen that it kills them as fast as they are given. We had such a case last year. Seven queens were killed in succession, although different plans were used and extra precautions taken. It would have been better to have broken up the colony, but there is a stubborn streak in Dr. Miller, and finally a virgin just hatched was given, which was respected and allowed to remain.

Although the introduction of a young virgin causes a delay of 8 or 10 days, as compared with the introduction of a laying queen, there is the practical certainty that it will be accepted by any colony. A colony with laying workers will not accept a good laying queen, but it will accept a very young virgin. Even a colony with a normal laying queen will not refuse a virgin less than 24 hours old, but will treat her kindly so long as she is a baby. But as soon as she becomes old enough so that it is a question between her and the old queen, then your virgin will disappear.

It would seem that it is the older bees that object to having a stepmother. So if the older bees be removed from the colony there will be less trouble. An easy way to remove them is to remove the colony to a new place, and the best way to do that is to put on the stand, in place of the hive, another hive containing perhaps empty combs, all but one frame of brood, setting on this the supers, if there were any, then the cover, and on top of this the hive containing the colony. Then the queen is introduced to the colony on top, and when she is laying nicely things may be restored to their former condition. The returning field bees find a full colony with a laying queen, and accept the situation. But in the exceptional cases of those colonies bound to kill every queen given them the plan will not work, the old bees killing the new queen when she is put down on the stand.

So this year, having again a troublesome case, we varied the plan. We put up the colony as before, taking away the supers, at least temporarily, and on the stand we set a hive with its one frame of brood, just as before, only this time the hive was not fastened to the bottom-board. When the queen was accepted and laying in the hive on top, we went in the evening, after bees had stopped flying (before they began flying in the morning would be just as well), lifted the hive from on top and set it on the ground, gave a little smoke to the hive on the stand and carefully removed it, so as not to start the bees to flying, set the hive with the laying queen on the stand, took off the cover, put over the hive a sheet of newspaper, and carefully set on this the hive with the one frame of brood, covering it up. We thus had all the old bees imprisoned in the hive-body on top. This proceeding saved the day. When a hole was dug through the newspaper, so that the bees could get through one at a time, they did so with a confused feeling, all the fight taken out of them, glad to be accepted without any resistance.

Of course, all this trouble would hardly be worth while in ordinary cases, but it may be well worth while in the case of a valuable queen, and in any case there is a gain of several days of brood-rearing as compared with giving a virgin.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

Letter from Mr. Bixby

On page 267 of the August Bee Journal, in the "California Department," appear criticisms by its venerable editor, Mr. Pleasants, of the Executive Board of the California State Beekeepers' Association and its journal the Western Honey Bee.

Ten months ago the Honey Bee, heavily in debt and receiving but a feeble support, was turned over to the present editor, admittedly to die. He adopted the policy of telling the truth about apicultural matters, as near as he could ascertain it. Naturally, this aroused some criticism, but today the journal is free from debt, has the cash support of some of the most prominent beekeepers all over the country, and without expenditure for advertising, but through the personal influence of the Editor and a few other earnest workers, has increased its paid subscription list over *120 percent.*

From the viewpoint of the Editor and the Executive Board, there is no "grave mistake" about this.

EDITOR WESTERN HONEY BEE.

We are sorry that our August "notes" displeased the Editor of the Western Honey Bee, but judging from the following published in the August "Bee," it would seem we are not alone:

> EDITOR HONEY BEE:—At the regular meeting of our San Bernardino County Club the members appointed a committee to communicate with you in regard to the reference to the prices of honey for this year in the editorials of the May Honey Bee, we feel it was uncalled for and should not have appeared; and quite a number have expressed themselves that they would not support the "Bee" if it is continued.
>
> J. A. MACK, *Secretary-Treasurer.*
> W. R. WIGGINS, *President.*
> B. G. BURDICK, *Vice-President.*
> Bloomington, Calif., July 4, 1914.

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Miscellaneous Notes

In an inspector's rounds among the apiaries, he finds many interesting and some amusing features. A beekeeper whom I visited lately keeps his hive register with bricks. He has his code reduced to a system equal to a card index. A brick on edge means one thing, one lying flat another, two bricks extra good condition, honey to spare, etc. He says he can stand at one end of the apiary and read the entire condition of his apiary from that distance. It is certainly a simplified method, if he can keep his bricks in place.

THE BOYS ARE PROUD OF THEIR POWER EXTRACTOR

A story, which was told me some time ago by a young man who assisted an irascible old beekeeper in time of stress, will bear repeating. The old man's lameness from rheumatism made it impossible for him to wheel in the honey, but he could manage the work in the extracting house by sitting at the table while uncapping the combs. His wife and the young man who came to help took the honey from the hives, the young man of course doing the heavy work. The old gentleman was somewhat given to using "language" when irritated, a fact which greatly troubled his wife who was a pious woman. The day was hot, and apparently the bees were, too, for when the old gentleman reached down for a fresh comb to uncap he got stung on the end of the nose. Suddenly throwing up his head he bumped it hard against the table. Well, for a few seconds the "air was blue." The old lady and her helper, who, by the way, was a near neighbor's son, were working at the time near the honey house, She turned a shocked and grave face to her assistant and said, "Poor wicked old man, Louie, I am afraid he and your pa will fetch up at the same place."

As an example of efficiency in caring for bees, I have not seen surpassed that of a young woman who manages an apiary I inspected last week. She cares for an apiary of 125 colonies. She took out this season five tons of extracted honey. The apiary is in reach of both sage and bean bloom. All the colonies except one, which was slightly affected with European foul brood, were in excellent condition. They have ample stores for carrying them through the winter, and there were only two queenless colonies in the entire apiary. The young lady has had entire management of this apiary for a year, and has had no help even during extracting time. The bees are in good, well painted hives, and the whole management would be a credit to any man.

The quaintest beekeeper of my acquaintance is little Joseph Holtz, Jr., the 8-year-old son of a neighbor of mine, who, by the way, is one of our representative bee-men. Little Joe has taken a keen interest in all his father does with bees since he has been old enough to hold the smoker, has never seemed to have any fear of bees, and has been father's "helper" for over a year. His father has given him a little apiary of his own, nine colonies I think, some regulars and some nuclei.

The picture shows Joseph, Jr., without mask, holding a frame, and his

LOADING HONEY IN THE MOUNTAINS

PART OF A SIX TON CROP

brother Alban, aged 6, with the mask, wielding the smoker. The little apiary is on a hillside adjoining the father's large apiary. When the picture was taken the bees were flying lively and somewhat cross. These children also have each a little garden of his own which they fenced (with wire) and till themselves. They speak both German and English, the parents wisely teaching them the mother tongue first.

The season's honey is now mostly hauled out of the mountain regions and stored, awaiting better prices.

The accompanying snapshots show the loading of the honey cases at the apiaries.

Our Coming Beekeepers

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Feeding

This brings up the feeding question, a live issue this fall in Ontario, as with a failure of the honey crop in most cases, and high price of sugar, many beekeepers hardly know what to do. Wherever sugar can be obtained doubtless it will be fed, but in many cases the beekeepers have not a bit of honey of any kind even if they preferred to feed it instead of sugar syrup. In my own case I thought I had definitely settled the matter as to how thick a syrup to feed, and it gave me quite a jolt to see what friend J. A. McKinnon has to say on this question in the last issue of the American Bee Journal.

While I have the greatest respect for Mr. McKinnon's ideas (he is one of the best queen breeders and all-around beekeepers), yet I think he is greatly mistaken in his conclusions when he states that a syrup made of two parts of sugar to one of water, fed in large quantities to the bees, will granulate solidly. I do not even add any acid to the syrup, and I am just about as sure as I can be of anything, that this thick syrup does not act that way with me. How do I know? Simply by the fact that after using this proportion for a number of years I have never lost a colony so fed, and when weighing colonies after being fed this mixture, they always showed a greater net gain than other colonies fed a like amount of sugar with more water to make a thinner syrup.

Often I have "jammed" a very populous colony to get spare combs to give to weaker colonies in the late fall, and I have never yet noticed this granulation when giving these combs to the bees, and these weaker colonies invariably winter well when so treated. Give me a thick syrup made of two parts of sugar to one of water, feed the syrup warm to the bees in the evening, the faster the better, at any time after Sept. 20 in our locality, and I will not bother about insuring the bees over winter provided proper protection is given, and they have enough of this mixture to keep them until warm weather. When I once find the trouble Mr. McKinnon mentions, then I will change the formula, but for the present I am fully persuaded to use the old standard when I start to feed next Monday (21st) if all goes well.

Outlook Improves

At this date, Sept. 16, there has been a wonderful improvement in prospects for next season, as compared with a month ago when sending in the last lot of notes for the American Bee Journal. Bounteous rains came after Aug. 16, accompanied by ten days of warm weather, with the result that everything is as green as in early June, and wherever a bit of clover had been able to stand the drouth, it is now showing up nicely. Rains came too late for buckwheat, and as a result we have a very light yield of honey from that source. From all information I have been able to gather, conditions are much the same all over the province, barring some favored localities.

In our own apiaries in York county it will keep us hustling to even up the feeding bill by selling the little buckwheat surplus we will have. Why not feed buckwheat honey? Simply because it is in super combs and has to be extracted, as very few combs are heavy and sealed enough to place in the brood-nest. Aside from that, when buckwheat honey is once extracted, I much prefer to feed sugar syrup even if I have to pay as much for the sugar per pound as I can get for the buckwheat honey. Even when sugar is as high as at the present ($6.30 per hundred at this date), buckwheat is ruling above that figure, and I shall not feed any of the latter. I have already bought my sugar, the bulk of it, before the raise in price.

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Spiders Protecting Super-Combs

Placing super-combs outside and allowing spiders to care for them (page 296) has worked finely this year. At the north yard, just referred to, we have had over 100 full-depth supers not needed, piled out all summer and not a moth in them, although many can be seen flying around in the evening. At home I had a pile in the apiary similarly situated. Have just been looking them over and found a few cells with the tell-tale veil over them. It is too late for any damage now in our locality. At the bottom of the piles of combs hundreds of wings of moths were found—all that was left of them by the few spiders in evidence.

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Willow Herb in Ontario

Have you ever noticed that what at the time may seem a great hardship, will eventually turn out to be "a blessing in disguise?" Last year during the great dearth that we had at the yard 100 miles north, forest fires came uncomfortably near our large apiary and burned over quite a tract of bush and second-growth stuff.

At the time we thought the few basswoods that were burned and the amount of white clover that was killed in the more open places, augured none too well for next year's prospects. While I had often heard of willow herb from our northern Michigan friends, I never once thought that we would ever know much about the plant here in Ontario. But about Aug. 10 honey began to come in, and we soon found the bulk of it was coming from the beautiful pink blossoms of the willow herb that had come up where the fires had been last year. Much rain and very cool weather during the latter part of August and the first part of September cut the surplus short to what it would have been, but even at the present (Sept. 16) honey is still coming in. For the past four days we have had summer conditions again.

We have just finished the extracting there (my father and son are at the yard), and the bees are plugging up the brood-nests in good shape. I spent three days there last week. It was fine to see the bees dropping in the grass in front of the hives at this late date, after a season at home of almost total failure. The willow herb is not a *stayer*, as two years is usually all it lasts. Then raspberries and other shrubbery crowd it out. Surely, nearly all of us could do at least a little of this and profit thereby.

BEE-KEEPING IN DIXIE

Conducted by J J Wilder, Cordele, Ga.

In Trouble

Mr. Wilder:—I have recently bought some 10-frame hives, and find that my old covers are too small for them. The metal roof and Colorado cover are long enough, but lack about ⅜-inch being wide enough. What can I do with these? H. F. Winter.

Tampa, Fla.

I believe the 10-frame hive has been made some larger recently in order to admit better manipulation of frames. This was a good change, even if it did come at a late time, for the regular 10-frame hive was not wide enough for 10 frames, and allow sufficient space for the easy and quick handling of the frames.

I would suggest that you use the old covers on the old hives until they give out, and the new ones on the new hives. It will not be a great task to keep them in use, for it is not often necessary to change covers, and if there should be a general mix up you can easily tell the old ones from the new. You might be able to pry the rim of the covers apart, just a little on both sides, so they would be wide enough to easily come down over the hive, and if the top edge of the rim should extend a little beyond the top they could be dressed even.

The Panic

The European war has brought a money panic which, no doubt, is felt by most beekeepers in the selling of honey and collecting for same. I, for one, am away behind from what I was this time last season. Business is fast slacking up and the question is, "What shall we do?" Of course, we must dispose of our unsold honey crop, and must not let it go at a sacrifice, but at least realize for it what we set out to at the first of the season. To do this, we must not rush it off, but place it in the hands of parties whom we know. Keep it closer at home, and if necessary put forth great efforts to dispose of a lot of it yourself.

This is a critical time, and we should exert ourselves in every way possible to dispose of even a little for cash; in other words, help to sell it. For these parties, whom we may trust to sell it at whatever they can get, may use the panic as a lever in more than one way to wrong the beekeepers.

I was in a large city the other day and went down on "commission row" and saw honey in nearly every house, and a far greater stock than they should carry. I did not have any honey there, and did not expect to place any in their hands, but I made enquiry as to sales, prices, etc., and was well informed. The prices they made me were about as usual, but I overheard a a talk between the proprietor and the bookkeeper in one of these houses, and know they were hiding behind this panic when it came to making remittances, etc. I knew where all the honey trusted in their care came from, and I left sadly impressed.

I know one beekeeper who did not ship his honey this year, but took it to neighboring towns and peddled it out, using an automobile in order to cover the field farther and more quickly. It was all sold to consumers direct, and he got the cash and his prices for it.

Caucasian Bees

Mr. Wilder:—I see that you have much to say about Caucasian bees and advocate them highly. I have several colonies of them which are getting crossed with Italians. I find them wonderful honey gatherers. I judge from your location and experience with them that you could do a great queen business by breeding this race of bees as soon as the beekeeping world learned their value. I have them in one yard with most every other kind I could get, and they and their crosses are by far the best. I have one crossed with the Cyprians, which is making a record this season, and the dash of Caucasian blood seems to knock out much of the bad temper in them.

From past experience I believe that by selecting some of the best Caucasian queens and some of the brightest colored drones of the Cyprians, a strain of bees could be established that in appearance would be much like the 3-banded Italians but far better.

G. C. Rahn,
Mgr. Rahn Bee and Honey Co.
Haileyburg, Ont.

If reports are true, the Caucasian bees are fast gaining ground everywhere, and in my opinion they will soon fully come to their own in true value.

A Suggestion

I have decided not to spread my bee-business for another season, but shall apply the emergency brakes, for I have been going at a rapid rate for several seasons. Money, no doubt, will be scarce, and now is the time to call a halt. I shall buy no supplies except what I will have to have for the honey

Portion of a Mountaineer's "Ideal" Apiary and Honey House in the Blue Ridge crop, and this will not take a great amount of capital. But, on the other hand, I am going to plan to increase the next season's crop of honey, and I am now working to that end in every way I can.

One of my apiarists, when he finished taking off, packing and shipping his crop of honey, wrote me after taking a few days' vacation, that he thought of taking up a small job until it was time to put the bees up for winter. I wrote him at once, "The panic is on us, and the times will be hard before you are aware of it. Keep right on with your apiary work. Stand by the bees, and they will in time stand by you for I have tried it. Your little job will soon be finished, and in the meantime your bees will suffer for want of attention. Go to the bees." Some time afterwards he wrote me that he was requeening nearly all his bees with the best stock, and expected to put them up for wintering in better shape than he ever had. Our other apiarists will fall in line with him as soon as they can, and no stones will be left unturned towards this end.

I have written this as a suggestion to other beekeepers, big or small.

A Portion of One of the Writer's Apiaries Where 100 Percent of Increase Was Made this Season

It will be remembered that I made considerable over 1000 colonies increase this season. The picture here shown was a portion of my O'Brien yard where 100 percent increase was made. These hives are of my own manufacture, and are made of cypress lumber throughout, including frames. They are unpainted. I have found this to be by far the most economical material I can get for hives.

More About Cypress Lumber for Bee-Hives—Cypress Defies Decay

"There are numerous cases of undisputed facts where cypress wood has withstood the test of time for 100 years with little or no repairs. Cypress resists decay longer than any other wood, does not warp or shrink, because it contains no rosin, and is adapted to the best uses of paint. It is the best wood known for out-of-door uses, and is preferable for interior work. It is no more costly than other woods, and is many times more durable."

I can endorse the above statement from my own experience, and as a lumberman for nearly 30 years, I had something to say some time ago, and responses came from a number of beekeepers, stating that this material had given them better satisfaction than white pine. Also, nearly all the bee-supply manufacturers responded, stating that they had had some experience in working this kind of material into hives and hive parts, and it worked and finished up well, and they were going to use this material more extensively in the future. I have tried it to a finish along by the side of white pine, and it has given far greater satisfaction.

Part of Wilder's "O'Brien" Apiary

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

European Foulbrood in Colorado

We have been on the lookout for European foulbrood for some time, hoping that it might be kept out entirely when it is in the States to the east and west of us. Dr. Phillips has encouraged us with the opinion that it might not visit Colorado because we have no black bees. But European foulbrood has broken out near Paonia in Delta county on the western slope in Colorado.

So far as known the disease is limited to a district not over three miles in diameter, and the total number of colonies within the area is about 250. We will do what we can to stamp it out so that it will not spread farther. Beekeepers are urged to read up and talk with any one who is familiar with this disease, so that if it visits their apiaries they will find it out at the first outbreak. I would especially urge beekeepers in Montrose, Delta and Mesa counties to be on the lookout.

The charactertistics that I first noticed were that the larvæ are affected earlier than is the case with American foulbrood. A good fresh case of European foulbrood will give a sour odor if you get your nose close to the comb, and it may make you feel just a little sick at the stomach if a good inhalation is taken. The description in the United States Department of Agriculture Bulletin, "The Treatment of Bee Diseases," No. 442, if carefully studied, will lead one to make a correct diagnosis. Weak and queenless colonies should be especially watched this fall. Strong colonies that were examined early in September in the affected apiaries in no case showed signs of the disease.

The Honey Market

We cannot foresee what the market will be this winter on honey, but comb is in good demand, and the probabilities are that the markets will be about bare by the time spring opens. The price on comb honey tends to rise, and the beekeepers should not be in too big a hurry this year to dispose of their crop. About the only concern that need be felt is to get the honey in comb disposed of before granulation sets in. In this part of the country we can tell pretty well what honey will show early signs of granulation and what will "stand up" a good long time.

Honey as Hog Feed

A western beekeeper has reported honey as a great fattener for hogs. It is this way: This party had about 50 hives of foulbrood that had to be rendered. The foulbrood had materially lessened the honey crop so that there was not much money to buy feed for the growing pigs. A few combs were thrown to the pigs, and they went for it with such a relish that it was made a regular diet in the evening so the bees would not be attracted. The pigs cleaned the honey up so well that by the next morning there was nothing left for the bees to work on. The frames were gathered up and burned.

The way those pigs put on fat was a delight to the owner. I do not know whether this would figure out as a profitable venture, but it saved a disagreeable job of melting combs and honey.

[We should be very much afraid of a few drops being left on the ground. This might be covered up with dry earth.—EDITOR.]

NOTES FROM ABROAD

By C. P. Dadant.

It was on Aug. 28, 1913, that we reached Meiringen, going south, and we had promised to be in Nyon, at the home of Mr. Bertrand, on the 30th. So we had two days to visit some of the most wonderful beauties of beautiful Switzerland.

I have spoken of the gorge of the Gorner as far beneath the Aare gorge in grandeur. It was at Meiringen that we visited the latter. Imagine a torrent rushing in a fissure several hundred feet deep and so narrow that one can often touch both walls with the hands, while walking on a board shelf, hung over the precipice. Where the gorge is too narrow a tunnel has been built to get from one part of it to another. This gorge is over a mile in length. During the entire time you can only see a little strip of the sky between the abrupt stone walls on either side. All this is lighted at night with electricity, and must look still more fearful then.

After walking along until you think you must have almost reached the glacier from which this stream emerges, you see the gorge open and a pretty village, Innertkirchen, shows itself in the distance. It is everywhere thus in Switzerland. As you scale impossible heights you imagine yourself beyond the inhabited world, and suddenly find automobile roads, villages and fashionable hotels. It is only when the snow is reached that there is nothing but huts to be found beyond. We saw this the next day, climbing the heights of the Little Scheidegg to the "Jungfrau." It was a warm day, and avalanches were sending their thundering explosions down to us every minute, though we could see nothing of them.

We had passed through the Lake of Brienz to reach Interlaken. We later went down the Lake of Thoun to continue southward. The villages by the lakeside are pictures of beauty. The brown houses, red roofs and green hills behind them, with the dark mountain above, and still higher the white peaks, make pictures that one would like to carry away.

On the 29th, we left Interlaken early, We had breakfast at Berne, lunch at Lausanne, and dined at the Bertrand home at Nyon. Our old friend had informed us by letter that he had extended an invitation to half a dozen leading beekeepers to take tea with us at his home the next day, which was Sunday. But he had not told us that he also expected the arrival of Mr. Thos. W. Cowan, the editor of the British Bee Journal, for the same day Mr. Cowan, who often spends the summer in Switzerland, had accepted the invitation to meet with us, and arrived from London, punctually at 9 a.m., the next day. The trip from London requires a little less than 24 hours. The reader may imagine how glad we were to meet him, and how proud we felt that he had selected this date for his visit, since it looked as if our presence might have had some influence on his determination.

It was a great day for us. The chalet is in one of the prettiest spots along Lake Geneva, and in full view of Mont Blanc. Our hosts had just come home from the mountain village mentioned in the May number, Gryon, where they spend the hot months (if anything can be called "hot" in Switzerland). The flower beds were all aglow, the pond lilies in full bloom, and the walks freshly raked. The company was good, and we give a picture of the little party. Of course we talked bees. Mr. Cowan, like Mr. and Mrs. Bertrand, speaks French or English at your pleasure, and you cannot show him a flower of which he is unable to tell the scientific name. Most of our readers have heard of his three leading works on bees: "The British Beekeeper's Guide Book," a practical work; "The Honey Bee," an exhaustive treatise on the anatomy and natural history of the bee; and "Wax Craft," a thorough work on beeswax, its uses and its adulterations. Some of his books have had the honor of eight translations.

Mr. Cowan gave me some valuable information concerning the Caucasian bee, and the reason why some bees of this race appear as if they were mixed with Italians. He had made enquiries and received the following information from Mr. Gorbotcheff, an official of the sericultural station of Caucasus at Tiflis: "The bees of Erivan (Transcaucasia south of Tiflis) are distinguished by their bright yellow-orange color, but the typical bee of the Caucasus mountains is of a dull gray color. The bees of north Caucasus are a mixture of the gray with the bees of Persia, which are also of bright color. The bee of Persia is a typical bee of the South, and in Caucasus is known under the name of 'bee of Lencoran.' Some beekeepers of Russia and Europe make the mistake of calling these bees 'Caucasians.' They are lazy, wicked, and great robbers. The production of queens of this specie is not large.

"On the contrary, the pure bees of the mountains of Caucasus are gentle, splendid workers, and their queens are great layers."

So when we rear Caucasian bees, if we want them pure, we must insist on the "dull gray color." Had our time been unlimited, and the way to the Caucasus unhampered by the Balkan war then raging, I should have liked to make an excursion to that country, for everybody who has tried the Caucasians praises them. But in our four months of vacation we could only follow a narrow little path through France, Switzerland and Italy. We still had the entire Italian trip before us, and had to refuse some very kind invitations from half a dozen beekeepers of Great Britain, including a hearty one from Mr. Cowan, who readily excused us. He understood that if we went through Great Britain, we must be prepared to spend a month or so there, and it was out of the question. It will be for some future date.

Mr. Forestier, a noted entomologist present (the fourth gentleman from the left, standing, page 345), told me that he had often dissected bees that had died of the May disease, and

"LE CHALET" OF MR. BERTRAND

found no nosema in them. Mr. White had reported the same from sample bees sent to him by me. Yet, was it not in the May disease that the German scientists first found the nosema? This parasite was also reported as found in the Isle-of-Wight disease. We have much to learn still. Mr. Cowan thought that the nosema was difficult to detect in dead bees. He was inclined to believe that it caused both the Isle-of-Wight disease and the May disease or paralysis, as it is called in America.

The information already received by me that the Italian mixed with the Swiss bees, or the Swiss-bred Italians, are the best for that climate, was confirmed by nearly every man present, and they are all leading beekeepers. Messrs. Bertrand, Odier, Warnery, Gautier, Bignens, Paintard and Forestier were unanimous on this point. In our own country how do northern-bred Italians compare with the southern bred? Have any of our beekeepers made any comparative experiments?

On the following day we had the surprise of a visit from our Lyon friend, Mr. Vibert, who was spending his vacation on the south shore of the lake. He knew we were to be there about that time and came, relying on the kind hospitality of Mr. Bertrand, to spend a few hours with us again. An hour after his arrival, a stranger came, and was announced as Mr. Ivan Louis Melikov, a bacteriologist at the Pasteur Institute of Paris. The bee association of Haute Savoie had asked for help in the study of the bacillus of foulbrood. This gentleman had come to them and had at once been directed to Mr. Bertrand for information. Our readers know of the long experience our friend has had with foulbrood. He had it in his own apiary, fought it with drugs and finally vanquished it. He translated F. C. Harrison's study of foulbrood, and wrote another study on it himself. Mr. Cowan, who was there, is also an authority on diseases. Mr. Melikov was evidently well posted on our host's reputation, for he paid him the neat compliment of saying that he was "the most celebrated authority on bees in the entire world." The compliment was fully deserved, though Mr. Bertrand modestly declined it.

Mr. Vibert called our attention to the number of nationalities gathered together in this little party. Mr. Melikov is of Russian nationality, so we had Russia, England, Switzerland, France and America represented. We enjoyed the day, and Mr. Melikov invited me to call on him at the Pasteur Institute on my return to Paris. He was in hopes of being able to prepare some studies of foulbrood in the meantime. Mr. Cowan said that, in his opinion, there are climatic differences between samples of the bacilli of Europe and America, and suggested that bacillus brandenbourgensis, bacillus burri and bacillus larvæ of White were perhaps identical.

The following morning I went down into the little park early and found Mr. Bertrand there in a mournful mood. We were to leave them that morning for the Italian trip. He said: "This is a melancholy morning for me, for I don't know whether I will ever see you again. Your father was one of my best friends, and I re-read some of his letters often. Yet I have never met him. Our friendship grew through correspondence."

It was a sad parting on both sides. We were glad that Mr. Cowan expected to remain a few days, as it made it less lonely for our old friends. We took the train at 10 o'clock for Bellinzona and Milan. This was the last episode of our month in Switzerland. It had been a happy month.

THE CASTLE OF NYON

CONTRIBUTED ARTICLES

Honey as a Remedy

BY H. SPUHLER.

MR. CREPIEUX - JAMIN, treating this subject in an article on page 58 of the February number of the Bee Journal, comes to the conclusion that "honey is a first-class food, but a medicine of low value." In view of this discredit of honey as a remedy, I take the liberty of supporting the opposite view, based mainly upon my experiments made while retailing honey.

Mr. Crépieux-Jamin is a physician of the bacteriological school which maintains that a great number of diseases are caused by microbes, and that each disease requires special remedies. On the other side are found doctors who claim that the microbes are not the original cause, but secondary phenomena, and that the true cause is the weakening of the organism and the lack of "force of resistance"; that in view of this, instead of using remedies we must strengthen the organs and procure to them the best sanitary conditions. As principal factors upon which our health depends are food, air, light, water, action and rest. These represent also the most efficacious means of re-establishing health. There are in Europe, especially in Germany in Austria and in Switzerland, a large number of physicians who, with great success, treat all diseases without medicines other than these natural factors, especially food diet and water—cold, warm, and in the shape of steam. There are a number of establishments run according to these principles and succeeding finely.

It is well recognized that a large number of diseases are caused by bad methods of nourishment, and it is of importance for sick people to be acquainted with a first-class aliment distinguished by its digestibility, strengthening the organism and presenting for that reason an important remedy. Honey is perhaps the oldest remedy known; it has been approved for centuries, and it will probably be used for the benefit of the sick when many of the present remedies will have long been forgotten forever. The following data refer to a few cures that I have observed myself and prove its efficacy:

Cure of anemia. An 8-year-old girl suffered so seriously of this disease that she was confined to her bed. A long medical treatment had no success and the parents were in despair. At last the patient was treated by a diet of honey dissolved in milk. After a few weeks she was enough stronger to be able to accompany her mother when she came to my house to purchase the honey. At the end of two months she was able to return to school.

A girl of 20, employed in a spinning-mill, was losing her strength from day to day. Fearing serious sickness, she applied for membership in a mutual insurance against disease, but owing to her condition of health, she was refused admission. The trouble in-

The Gentleman and Lady at the Right Were Our Hosts, Mr. and Mrs. Bertrand. On the Extreme Left Sitting is Mr. Thos. W. Cowan, Senior Editor of the British Bee Journal

creased; she had to seek the help of physicians, and was finally compelled to enter a hospital, where she hoped to be cured. She was advised to try a honey cure. She did so, and was soon able to resume her work. She was even accepted as member of the assurance company to which she had formerly applied and had been refused.

Stomach complaints. A woman of 60 had grievous stomach pains which became at times intolerable, and no medicines could allay them. She had recourse to honey which brought her almost instantaneous relief in the worst crisis.

Asthma. An asthmatic lady neighbor, regularly buying honey from me, often declared that this was the only thing which brought her any relief.

Pulmonary affections. A man of 40, keeping an inn, was suffering from lung trouble. He consulted without relief all the neighboring doctors, and later, professors and specialists of the capital. He finally spent some time in an establishment where this disease is treated with water and dieting, but all was in vain. The disease was increasing. One day he met a man who advised him to try a honey cure, asserting that such a treatment had saved him from similar conditions. He followed the advice and was cured in a few months, taking three times per day a spoonful of honey dissolved in milk. He died two years ago at the age of 70.

Rheumatism. I know of a number of cases where men were cured of rheumatism by keeping bees and eating honey.

The above cases prove that honey is not only a healthy food but a valuable remedy. This is recognized and acknowledged by physicians. One of these said to me: "Honey has never failed to help in chidren diseases." Another physician of renown who possesses an establishment for children uses honey on a large scale, and has given the following beautiful statement: "Honey is not only a useful human remedy, it is also useful in veterinary practice. The country people often use it for this purpose, and one of my friends who is a capable veterinarian, has largely used it in his profession.

If, as I have shown, honey possesses excellent alimentary and salutary qualities, it is the duty of the beekeepers to emphasize this fact by disseminating it and increasing the demand of honey, ambrosia of which Solomon said: "Eat thou honey, my son, for it is good."

Zurich, Switzerland.

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Coumarin and the "Bitter Principle"

BY A. F. BONNEY.

It has been some months since I began investigation of the so-called bitter principle of sweet clover, led to do so by finding that Mr. Westgate, Agronomist in charge of Clover Investigations, with headquarters in Washington. D. C., had changed his mind about wanting sweet clover without the bitter taste. He had, with others, theorized that a tasteless sweet clover would take the place of the other trefoils, as alfalfa and white clover for pasture and hay. However, it was next theorized that the "bitter principle" was an element which prevented the sweet clover from causing "bloat" in cattle, said disorder being acute fermentive indigestion, with no other evidence than that cattle which ate the sweet clover did not have the bloat. They did not stop to think that not all animals which eat of white clover do bloat, and that probably 100,000 critters eat white clover where *one* consumes sweet clover.

In other words, we do not *know* that sweet clover will not bloat cattle; therefore, we cannot know that it is the bitter principle of sweet clover which prevents indigestion. Why is it not the coumarin itself? It is more abundant.

Mr. Westgate took the first opportunity to have an analysis made of some sweet clovers, and sent me some very small samples. I could not analyze such small masses, so sent them to my friend, Mr. Francis, chemist for Park, Davis & Co., probably the largest chemical and biological establishment in the world. His letter attached shows that he was in the same quandary as myself. Unfortunately, he does not seem to promise an analysis of a bale of the sweet clover hay, and students will have to be satisfied with the light I have so far been enabled to throw on the subject.

In the meantime, the farmers all over the United States are losing their hatred of sweet clover, and I have not been threatened with arrest for some four years in connection with the fragrant weed.

The attached letters will tell the rest of the story.

Buck Grove. Iowa.

Dr. A. F. Bonney, Buck Grove, Iowa.—

Dear Sir:—I have had extracts made of coumarin from both *Melilotus alba* and *M. officinalis*, and am sending the same under separate cover. The crystals certainly taste like the bitter principle in the Melilotus, and I have no reason now to think that these crystals are other than the coumarin. The green plants were distilled by steam, and the resulting distillate was extracted with ether, and the solution allowed to evaporate.

The crystals from *Melilotus alba* appearing gave the bitter taste of coumarin, and showed a melting point of 67 degrees, which is exactly what coumarin crystals should show. The *Melilotus officinalis* crystals gave a melting point 3 degrees lower than this, owing apparently to the presence of a volatile oil. There is also in Melilotus a presence called Melilotic acid. This has an astringent flavor, and probably combines with the coumarin to give the distinctive taste to Melilotus. J. M. Westgate,
Agronomist in charge of Clover Investigations.

Dr. A. F. Bonney, Buck Grove, Iowa.—

My Dear Dr. Bonney:—Your letter concerning coumarin, with the attached report from Mr, Westgate, of the Department of Agriculture, was received several weeks ago, as were the small samples of crystalline substances extracted from the Melilotus.

Upon reading your letter I hoped that the samples of crystals extracted from the two plants might be sufficiently large in quantity to permit of careful purification in our own laboratory, which would enable us to determine its constitution, melting points, etc.

As you know, however, any work along the line of purification was absolutely hopeless, as there was the very smallest quantity of material available, and I assume that this lack of material is one reason why Mr. Westgate could not prosecute his investigation to more definite results.

Now there is no doubt that coumarin is a prominent and important ingredient in both species of sweet clover; moreover, there is no doubt in my mind but that the presence of this substance in the plant, and consequently in the bloom, is responsible in a large measure for the peculiar and exceedingly pleasant flavor of the sweet clover honey.

Mr. Westgate is in error in assuming that coumarin is bitter. The substance in an absolutely pure form chemically is very easily obtainable, and exists in the form of white crystals, which have the peculiar odor and taste characteristic of coumarin, and in its concentrated form also has a peppery taste in the mouth. If the substance is pure, however, there is not the slightest suggestion of *bitterness.*

As regards this important matter which you have brought up, namely, that one species of sweet clover differs from the other, no light is given us by this report nor by the examination of these minute samples. It is true that one of the samples of crystals does have a decidedly bitterish taste, whereas the other does not, but the samples were so small and impure that this was not an evidence that the coumarin extracted from the sample of sweet clover contained none of the characteristic bitter substances of the plant, whereas both the coumarin and the bitter were extracted from the second plant

What this bitter substance is can only be determined by a careful chemical analysis of a large quantity of the drug. My experi-

Mr. E. Bertrand

ence has shown that it will be necessary to start with a bale of the dry sweet clover, and one would probably have to extract as much as 300 or 400 pounds of the "clover hay." With this amount of material it could be extracted with ether or some similar solvent, and then by well-known methods of analysis the coumarin could be separated in pure form, and the identity of the bitter substance might also at the same time be determined. There is absolutely no use in attempting to solve this problem with a small quantity of drug

PARKE, DAVIS & COMPANY.
J. M. Francis.

Shipping Comb Honey by Express

BY C. T. OHLINGER.

AFTER several years of experimenting with different kinds of packages, such as glass shipping cases, corrugated paper boxes, tin boxes, as containers for comb honey to go by express, I learned that a little deception will insure safe arrival of the fragile article. Since the days of the parcel post, the rush of business of our *dear* express companies is over. Yet one is not sure of what will become of a package of comb honey entrusted to the tender mercies of the notorious rough handlers in the employ of the express companies.

It is a well-known fact that no attention is paid to such notices as "Comb Honey," "Handle with Care," "Fragile," "This Side Up," etc. The side that is to go up is sure to go down. When goods arrive in bad order you may put in a claim for damages and wait until the claim is adjusted. There is one package, however, which conjures up thoughts of careful handling in the minds of express and baggage men, *i. e.*, an *egg crate.* I have been using them several seasons for shipping comb honey by express to customers who want from 25 to 50 sections at a time.

I pack 48 4x5 sections in a crate, 24 on each side of the partition. There will be two rows of 8 sections on the bottom—the sections standing lengthwise with the crate—and one row of 8 on top next to the partition board. This brings the weight to the center of the crate. The weight of the whole crate will be about the same as that of a full crate of eggs. The empty space is filled out with newspapers to prevent the sections from shifting. I purposely omit the marks "Comb Honey" on the box. The agent is told that I am shipping comb honey in order to get the proper receipt. But the men who handle the crate in transit get the idea that they are handling eggs, and everything goes well. Sometimes I fill an order for eggs and comb honey. Both go into the same box as a mixed shipment. The egg crate has solved the problem of getting small shipments of comb honey to private parties safely and quickly.

Angelica, N. Y.

Honey and Biology

BY J. A. HEBERLE, B. S.

(*Based on a lecture of Dr. Thoeni, published in the Sschw. Bienenzeitung*)

(CONTINUED FROM PAGE 315.)

IT was Prof. Langer, of Graz, who first proved that the diastase ferment in honey, which we know changes starch into dextrin is secreted by the honey bee. This has been proven by the serological method of differentiating albumen, of which more will be said.

Auzinger was the first to experiment with solutions of honey to determine the power of the ferments. He used the same method that Koning used to determine the diastase in milk. The method is as follows: Take 10 c. c. of honey solution 1:2, add 1 c. c. of a solution of starch, strength 1 percent, leave one hour in the water bath at a temperature of 45 degrees C. If the honey solution contains diastase, all the starch will be changed to sugar. To test this add 1 c. c. of a solution of potassium iodide, shake well and notice the color. If all the starch has been changed, the color will be but little darker than the solution taken for the experiment; if no starch has been changed, the color will be a deep black blue.

The results obtained with this method tested by various institutions, may be summarized as follows: Most of the samples of genuine extracted honey, when used in quantities mentioned, gave colors from a bright olive green to a light brown.

Boiled honey solutions showed a deep blue to a black-blue color because they contained no active ferments. Heated honeys show the following colors according to the elevation of the temperature and the time of exposure: Red-brown, brown-olive, bright blue-green, blue-green, deep blue. Artificial honeys show uniformly a deep black-blue because they contain no ferments. According to the experiments of Leuenberger, on the influence of heat on honey, in regard to the diastase reaction, only temperatures above 90 degrees C. caused a darker color than that of the same honey not heated. Besides the ferments, there is a specific albumen present in honey. Its presence is also proven by a biological method.

THE QUANTITATIVE PRECIPITATE REACTION.

Prof. Langer has also laid the foundation to this method. It has been said that the ferments are bound to the albumen molecules, which really means they are a part of the albumen. To obtain the ferments from any solution, reagents that precipitate albumen, as alcohol, ammonium sulphate, etc., are used. Such a precipitate contains, besides the ferments, all the albuminous bodies. He found that the albumen in the honey is of animal origin—that it is from the bee. To prove this he used the serological method called the "precipitate reaction." Since this is one of the most important biological methods, a short explanation might interest the readers.

If a solution from the albumen of a hen's egg be injected a few times in a rabbit, there will be formed, in the blood of this rabbit, a substance called the "precipitate." If blood from this rabbit is taken, and the red corpuscles separated, an almost clear solution—the serum—is obtained. This serum, through the injection, has acquired the singular property of giving a precipitate with a solution of albumen from a hen's egg, but not with any other albumen, not even with the albumen from a duck or goose egg. A precipitate with the serum is only obtained when the albuminous solution is from the same source as the solution used for the injection. With this method it is easy to recognize human blood from that of animals, or blood of the ox from that of the horse, etc.

In order to determine the source of albumen in honey, Prof. Langer injected in a rabbit a solution of albumen from honey. The honey-albumen serum gave a precipitate not only with a solution of albumen from honey, but also with watery extracts of bee heads, the larvæ and the food (chime? chile?) with which the bees feed the young brood. The same results were obtained when, instead of a solution of honey albumen, the watery extracts from bee heads were used for the injection. Not fully satisfied with this, Prof. Langer made watery extracts from flowers and seeds of plants from which the bees gather pollen and nectar. With these extracts he could in no instance obtain a precipitate with serum of honey albumen or bee-heads extract. Finally he used water extracts of triturated pollen for injection; the serum obtained gave a precipitate with pollen extracts, but not with honey albumen, etc. Thus it was proven that honey contains albumen which is secreted by the bees, and while transforming nectar into honey is incorporated or mixed with it.

It was found that the proportion of albumen in honey varies comparatively little, and, further, that the "precipitate reaction," when the right amount and the right concentration are used, gives results that may quantitatively be useful.

The honey albumen serums are not all equal; therefore, in each analysis a genuine honey has to be tested with the other samples, as a check.

To obtain the serum, the use of queen-cell contents has been found the most convenient.

In making the test, honey solutions are prepared of 10 percent, 2 percent, and 1 percent strength; 1 c. c. of each is used. For the 10 percent solution, 0.5 c. c.; for the 2 percent solution, 0.2, and for the 1 percent solution, 0.2 c. c. of the serum is used and a drop of toluol is added to each sample to check bacterial growth. After a thorough shaking, the samples are allowed to stand five hours at a temperature of 35 degrees C. At the expiration of that time the reaction is considered complete. Specially constructed glass tubes, narrow at the bottom and graduated, are used. The samples are for five minutes rotated in a centrifugal apparatus, so the precipitate will collect at the bottom in uniform density, and the quantum is measured or read off.

The results so far obtained show that honey from the forest, from a fir tree, has a little less albumen than that from the nectar of flowers. Probably honeydew will do the same.

Sugar fed to bees and extracted showed about one-half as much albumen as honey. This the beekeepers should bear in mind. Sugar has no albumen; it is the bees who supply that, which, no doubt, is detrimental to the bees when feeding large quantities of sugar. It may also be pointed, here, that honey is more than a mere sweet. It can be assimilated without further work on the digestive organs. Sugar must first be inverted. In addition it contains a great variety of other substances, ethereal oils, albumen, etc., while sugar is a pure hydrocarbon, a nutriment, but not as wholesome (?), salubrious (?) as honey.

Kempten, Bavaria, Germany.

Beekeepers I Have Known—"W. S. Pangburn"

BY FRANK C. PELLETT.

THERE are beekeeping farmers and again there are farming beekeepers. Shelly Pangburn belongs to the latter class. Although he farms on quite an extensive scale, his bees are not neglected, and beekeeping is not with him a side line.

Until a few years ago friend Pangburn was a painter by trade, but laying aside his brushes he moved to the country and bought a farm overlooking the town of Center Junction, Iowa. Being a great hustler and a good manager he has prospered from the first, and now finds himself in very comfortable circumstances. His is one of the neatest apiaries in Iowa, and he has every facility for lightening the labor of caring for his honey crop. The honey house is composed of three large rooms. In one end is the work shop for assembling hives and supplies, and in the other end the extracting room. The center room is used for the engine and also contains the cream separator, for the Pangburns also have a fine dairy herd. There is a power machine also, which robs wash day of its terrors for the women of the household.

Mr. Pangburn has hit on the best plan of liquefying candied honey that I have seen for the average beekeeper's use. He bought a feed cooker from one of the catalog houses for $11 that just fills the bill. The tank is the right size for eight 60-pound cans. He has made a wooden crate, as shown in the photograph, which lifts the cans about 4 inches from the bottom of the tank. He puts 3 or 4 inches of water in the bottom of the tank, but not enough to come up around the cans. The cover is shut down and the honey heated by steam instead of hot water. A small hole in the top allows a thermometer to be seen at any time, and in case the heat arises too high it can be lowered instantly by raising the cover and allowing the steam to escape.

The photograph shows the outfit as it stands in the honey house. Very little fuel is required, and as much honey can be melted at one time as the ordinary beekeeper will have occasion to use. It seems to me that our supply dealers might look into this proposition and offer this outfit in their catalogs.

The Pangburn home is one of culture and refinement with music and good reading matter much in evidence. Mrs. Pangburn has a little the best of the family division, for there are three attractive daughters and only two sons. It sometimes happens, however, in cases like this, that the girls leave the nest sooner than the boys, so it seems to be a fair division after all. The youngest son seems very much interested in the bees, and bids fair to be an unusual help to his father in the apiary. He shows a knowledge of beekeeping rare in children much older than he.

Any live beekeeper will enjoy a visit to the Pangburn apiary.

Atlantic, Iowa.

Methods of Queen Introduction

BY J. E. HAND.

THE successful introduction of alien queens has been a problem for the amateur and the professional, as well as for the novice and the expert throughout the beekeeping world. Experimenters have discovered that while there are seasons and conditions when alien queens may be given to queenless bees direct, with impunity, some method of introduction is imperative

The Pangburn Home at Center Junction, Iowa

W. S. Pangburn and His Seven-Year-Old Son in the Apiary

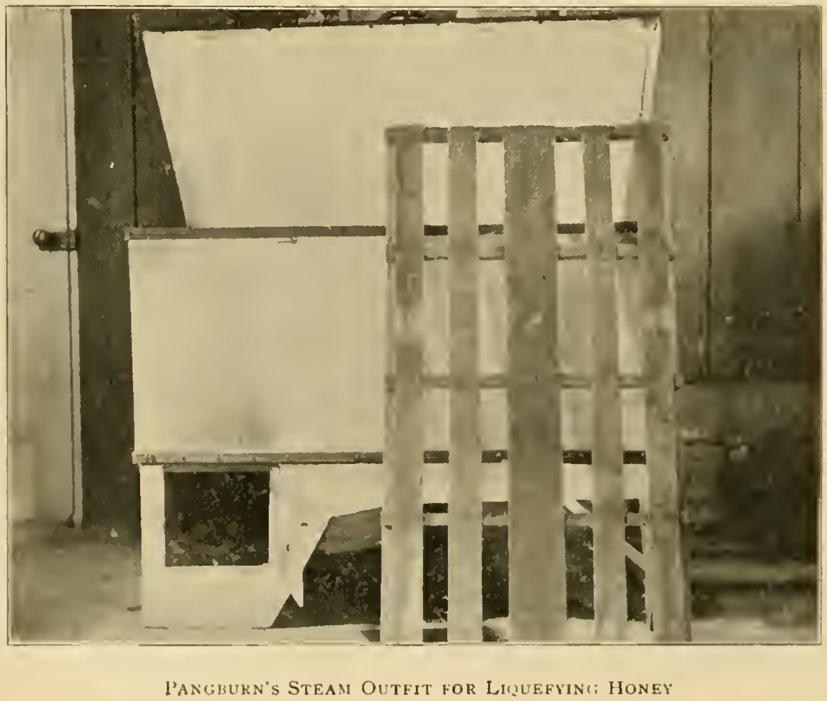
to prepare alien queens for a safe reception by a queenless colony. The knowledge that the acts of bees within the hive are guided chiefly by the sense of smell, has led to the almost universal opinion that odor is the basic principle in queen introduction. The theory is that each colony has its peculiar odor by which individual members are recognized and distinguished from individuals of other colonies.

THE TRANSMISSION OF ODOR.

This theory induced experimenters to search for some economical method of transmitting the colony odor to queens. This led to the discovery of two methods of odor transmission, the smoke method and the cage method, both of which were described in Doolittle's book on queen-rearing, published more than a quarter century ago, and both are in vogue at the present time.—[See pages 75 and 76 of "Doolittle's Queen-Rearing."—Ed.]

THE CAGE METHOD.

The cage method is very simple, and yet close observation concerning the attitude and behavior of bees toward a caged queen is essential to success with this method. It consists of suspending the cage containing the queen over a space between the combs, exposing the wire-cloth side to the bees, leaving it there until the caged queen shall have acquired the colony odor, after which she will be accepted without parley. Perfect success is assured by this method only when the queen remains caged until the colony odor is acquired; thousands of queens are sacrificed every season because ignorant beekeepers, unmindful of the hostile attitude toward the caged queen, allow them to eat out the candy and release her before the odor is transmitted; an operation that requires more time with different queens.



Pangburn's Steam Outfit for Liquefying Honey

When friendly relations are established by the transmission of odor, a radical change takes place, and instead of hostile demonstrations she now receives affectionate caresses, and will be welcomed with eagerness. This change in the attitude of bees toward a caged queen is unerringly manifest to the practiced eye of the student of bee-nature, and he will keep her caged until the change occurs, and will seldom lose a queen.

Daily examination is necessary. If they are clustered thickly on the cage, biting the wire-cloth, and exhibiting a general attitude of anger and resentment, return the cage and repeat the operation daily until the bees cease to take any notice of the intruder; when this change comes, it is safe to release the queen. We remove most of the candy and allow the bees to do the rest.

Approximately 80 percent of queens will be accepted within 48 hours, and the remainder will range from that time up to a week or more; hence 20 percent of the queens are sacrificed by permitting the bees to eat the candy and release them before the colony odor is acquired. If these instructions are rigidly observed, there is little excuse for losing a queen by the cage method, for I doubt if there ever was a queen that could not be successfully introduced by this method if sufficient time is allowed for the transmission of odor.

SMOKE METHOD OF ODOR TRANSMISSION

During the past quarter century, various methods have been in vogue by which odor is transmitted through the agency of smoke. Some have accomplished it by blowing smoke into the entrance, accompanied by drumming on the hives, thus causing the bees to roar in distress and fright; the queen is then run in, followed by a few more puffs of smoke. Others omit the drumming, and depend upon smoke exclusively, using more of it, and closing the hive for a few minutes; while others have been equally successful in the moderate use of tobacco smoke. This is perhaps the most effective, having an odor so pungent that little is required for the transmission of it. While the basic principle is the same, the two methods are widely different, for in the latter the colony odor is transmitted to the entire contents of the hive, including the alien queen. The smoke odor is transmitted in five minutes, while several days are sometimes required to transmit the colony odor to a caged queen.

There are two important factors involved in the smoke method, the rapid unifying of odors within the hive, and

Canadians and Americans celebrating July 1 at the Finca of Mr. Rolando Kendall, near Holguin, Cuba. Mr. Kendall, besides being a fruit grower, is a "bee bug." Twenty colonies bought July 26, 1913, have given an average of over 10 gallons per colony and 100 percent increase.—D. W. MILLAR.

the instantaneous perversion of the sense of smell, resulting from inhaling smoke. Undoubtedly these two factors are directly responsible for the success of the smoke method. The excessive inhalation of smoke, or the assimilation of odoriferous vegetables, such as onions, garlic, etc., will render the organs of smell and taste unreliable temporarily in humans, and why not in bees?

While some have made an attempt to ignore the part that odor performs in the domestic economy of the hive, that element is in the minority, and the consensus of opinion among progressive American beekeepers is that odor transmission is the basic principle of successful queen introduction.

Birmingham, Ohio.

Ancient Apiculture—Aristotle

BY E. M. MACDONALD.

WHEN we read over the works of old beekeepers, the wonder is not that they knew so little of bees and their ways, but that they knew so much. Aristotle lived some 2300 years ago, having been born in 384 B. C. in Grecian Turkey. He seems to have been an omnivorous reader and amassed a vast stock of facts gleaned from others and also from the fruits of his own observations. His classification forms the groundwork of later labors. He was the earliest to note and describe the four membranous wings of bees and other insects, he described the various parts of their six legs, and he was the first to accord to the two magic working horns or feelers in front of the head, the name of antennae, "because they hold them forth before."

He gives the first and best summary of Greek knowledge of the structure and habits of the bee, and his observations served as a model for subsequent writers, even until a comparatively recent period. Virgil, Pliny and Columella drew largely on his facts and fancies, and even our own classic Butler had a great admiration for this ancient scientist, for he tells us that Aristotle "discovered more at large about bees than he did on any other living creatures."

The generation of bees was a great puzzle to this author as well as to all early bee writers. He says, "All are not agreed about the generation of bees. Some say they collect them from the flowers, others that the rulers (the King then, our Queen) produce the young of the bees. By some they are called the mother-bees as if they were the parents of the rest, and they agree that unless the ruler is present, drones only are produced, and no worker-bees. Others affirm that drones are males and bees females." How near the actual truth these ancient beekeepers were!

He observed the eggs in the cells, and even noted that at first they lay in an angular position and change later. From this egg proceeded a worm (larva) and he had at least a dim idea of the feeding process after the egg hatched. The egg at first increased by its own powers, containing as it did the material "necessary for augmentation." Honey is placed beside the larvae for conviently transmitting it to the brood-cells, and they breed best when honey is coming in plentifully. He noticed the royal jelly and looked on it as matter for generation as well as for augmentation. Queen cells were observed in hives to the number of six or seven before swarming. He noticed that they were destroyed later, also that supernumerary queens were killed off as useless, if not indeed mischievous.

Aristotle accorded to bees the organs of sight, smell, touch, taste, but had doubts of the sense of hearing, and he held that they cannot speak. "Insects have neither voice nor speech, but make a sound with the air within them (spiracles), not with that which is external, but they make a sound with the membrane beneath the divisions of the body." "They can smell from a great distance, and can scent honey or fields of nectar when very far away. Any contamination in the hive is an offence, and they carry out dead bees before they display signs of putrefaction, while they void their excrement outside so that it may not contaminate the hive atmosphere. They dislike all offensive smells and the scent of alcoholics and readily sting persons who use such things." He taught his successors a bad lesson in stating that bees were weak in the sense of sight. We moderns must marvel at the statement as this is one of the points in which they are most perfect.

He was much puzzled if drones are males why they should be in subjection to their females, "because nature never gives females the power to defend themselves and destroy the males." Drones, he declares, are useless—yet because of their presence bees are more industrious and hives, in their absence at the right time, fail to do their best work. "Drones are thieves." Beekepers even at this early date had a species of drone trap or excluder. They narrowed the en-

Roasting the pig at Mr. Kendall's July 1, 1914. The animal is drawn and a stick passed through him lengthwise. He is then slowly turned before the fire until done. It is a long job, but "mighty fine doings."—D. W. MILLAR.

"Loma de Miel" Apiary at Holguin, Cuba.
The past year, in my particular location, has been the poorest I ever saw in Cuba, on account of dry weather, but I averaged a little better than 10 gallons of extracted honey per colony, and bees are in fine shape now.—D. W. Millar.

trance to keep them out and thus rid the hives of this "useless bee."

"Honey falls from the air and generally none is produced before the rising of the Pleiades" (Pliny calls it the spittal of the stars). This idea lasted long. "Wax," he tells us "is made from the flowers," referring no doubt to the pollen with which it was long confounded. "Bees breed their sweet kind" from the amiable matter found in the flowers. Honey came from the air or appeared as a dew—these were the ancient beliefs. Our author commends the whitest honey showing that their "dew" and ours differ at least in color. Aristotle believed in a division of labor among the bees much the same as that so poetically described in Shakespeare: "They have a king and officers of sorts, etc."

He tells us that in his time bees stung animals as large as horses causing death at times. "When they sting anything they perish for they cannot withdraw their sting from the wound without tearing their own entrails, but they are frequently saved if the person presses the sting from the wound." The efficacy of the sting as a weapon of offense and defence was well known and thoroughly appreciated in these early times. Particularly is this brought under our notice when he deals with bees' enemies. Ever since his day the swallow has borne the reproach of being a deadly enemy; wasps are also blamed for being very destructive, while the toad is accused of blowing in at the entrance to entice the bees to come out and be eaten. Old writers always produce a long list of deadly enemies of bees, but I am pleased to put on record the fact that man was not one of these at that time in ancient Greece, for he tells us distinctly that their keepers "took what honey they could spare and did not kill them." We learn that they knew how to smoke bees, and also how to brimstone them even at that early date, but it says much for their skill and humanity to know that they only took the surplus as their share.

A warm, dry season, he considered, was the best for honey and a moist one for swarms. Swarms, he considered, were made up mostly of young bees. He mentions the peculiar note of swarming and gives us a graphic picture of the hurly-burly in and outside the hive while the bees are rushing about. He was one of the first to take notice of "ringing" or "tanging" bees and to condemn it. "They appear to have pleasure in noises, so they say that they collect them into their hives by striking vessels and making noises." He doubts if bees can hear, and therefore concludes they may collect either from pleasure or from fear, but not on account of the ringing. He does not credit that bees can be generated from the carcasses of dead animals, because they shun everything that is putrid or unclean and love what is clean.

The belief in bees as weather prophets is very ancient. Aristotle says: "Bees discover the approach of cold weather and of rain and they will not leave the hive even if the day is fine but remain occupied inside; and by this their keepers know that they expect severe weather."

Aristotle is the most scientific of ancient beekeepers, he liked to verify even his quotations and he is very guarded in making direct statements; he seems to examine everyone from a scientific standpoint. The beekeeping section of his "Natural History" is the best known and the most trustworthy of ancient works of nature as a whole, and especially on apiculture.

It is doubtful if he himself was an active beekeeper. He tells us of several sources from which he derived his information — Aristomachis of Soli, for instance, who for a period of fifty-eight years did nothing else but study the bees, and also Philiseus who passed his life apart from his fellow men tending his bees, and living by the fruits of their labors.
Banff, Scotland.

That Chaff Hive

BY J. E. HAND.

THAT chaff hive article in the July number of the American Bee Journal, page 240, by Dr. Bonney, calls for some explanation, and possibly some correction, especially his statement that I advocated a hive only four inches deep in 1907. I am inclined to be lenient with him, however, for he evidently does not understand that a single division of a sectional hive does not constitute a hive, but is only part of a hive, and that an eight frame sectional hive, composed of shallow divisions, may be larger than a fixed hive of sixteen frame capacity. It is to be regretted, however, that so much time and space is required to explain a matter that should be apparent to a novice, and doubly so, to one who poses as an authority upon subjects pertaining to the economics of beehive architecture. Evidently his memory needs sharpening, for, in spite of his statement concerning our alleged four inch hive, the smallest division of a hive that we ever used was over five inches deep, and three divisions constituted a regular brood chamber over fifteen inches deep; this is the four (?) inch hive that Dr. Bonney is worrying about, but we cannot see what that hive has to do with the convertible method of wintering bees.

Again, Dr. Bonney is in error in assuming that we use eight frame supers, for our brood chambers and supers are alike and interchangeble, furthermore, his suggested modification of our convertible hive introduces undesirable complications that weaken the protection at critical points, and leave one side of the winter nest unprotected by packing. The sixteen frame hive, with the eight frame inner chamber is an economical solution of the wintering problem, for it is a single wall hive in summer, and a double wall hive in winter, providing perfect winter protection at half the cost of chaff hives. My opinion concerning the status of chaff hives, past, and present, is based on personal experience, and personal observation, covering a period of more than a quarter century. In 1880 I purchased my first chaff hives for $1.50 in the flat, they were two story hives, double walled throughout, with a capacity for fourteen frames above, and ten below, and were undoubtedly the best wintering hives ever put on the market in this country. Mean-

time, however, they have been reduced to a single story, with half as much material and protection as formerly, and yet they are sold today for $3.25 in the flat, without any upper story. Dr. Bonney objects to my calling them "deteriorating in quality and advancing in priec," but I cannot think of a more appropriate epithet. It is hoped that this explanation will suffice for all who have fallen into the error of assuming that the sectional hive is a small hive.
Birmingham, Ohio.

Geo. S. Crone in His Apiary at Browning, Ill.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
Dr. C. C. Miller, Marengo, Ill.
He does NOT answer bee-keeping questions by mail.

More Honey Without Swarms—Requeening

1. I started beekeeping last year with a three frame Necleus. This year that colony swarmed three times. I united the second and third swarms. The swarms have each filled over two supers and the old colony has started in the second. Would I have obtained more honey if they had not swarmed.

2. How can I know if the virgins mated with their brothers, as I think it is possible —as the nearest bees to me are three miles away over a ridge?

3. Should I requeen the prime swarm? When?

4. How many frames of honey does a colony need to winter outside.

5. Are Italians the only bees having three yellow rings on the abdomen? Should the rings be wide or narrow?

6. What causes the bees to fly out in front of their hive in great excitement for a short time and then return to it without attempting to cluster.
Washington.

Answers: — 1. Very likely you would have had more honey up to date of your letter if the bees had not swarmed. But if the season should continue long and late it might be the other way.

2. You cannot know, unless it be that your neighbor's bees are different from yours (say blacks, while yours are Italians) and then you may tell by the worker progeny of your young queens.

3. No, unless it be to give them a queen of better stock, and then you can do it at or near the close of harvest.

4. They should have the equivalent of thirty pounds of honey, and forty will do no harm.

5. There are others having there such rings, as the Cyprians. It doesn't matter about width of rings. The distance of one ring from another being the same in all cases.

6. It is the younger bees coming out for a play spell to take exercise.

How to Prevent Swarming?

My bees are hybrids but I am requeening with Golden Italians. My greatest trouble in handling bees is my inability to prevent swarming. I have tried numbers of plans, but still they swarm. Have tried ventilation, both top and bottom, give them plenty of space, go through them in the spring before they start raising young and give them a thorough house cleaning, put on supers when I see they are ready for them and still they swarm.

The most satisfactory way I have found yet, is to go through them and cut out all queen cells, after they have the swarming fever. I would like to read some other experiences on this subject in the American Bee Journal. If I could overcome this one thing, I would be better satisfied to handle bees. Have read some about cutting out drone combs, so am going to try it next spring, and replace with worker comb.

Each new swarm I take shall be put on frames filled with full sheets of foundation, as heavy as they make. My idea is not to increase the number of colonies, but keep the old ones strong and well stimulated.

I saw in the May number, I believe, where some one said "the up to date" bee man does not use, or hardly ever uses the queen trap. I do not see how I could get along without it. I try to have one for each hive. When I see them getting ready to swarm I put on the trap, or else I would lose them. I am not physically able to climb and saw off limbs, then too, my work takes me away from home nearly all day, so I would lose 9 out of every ten swarms were it not for my traps.

As I am somewhat of a carpenter, I make all my own hives. Some may say I can buy them cheaper, but being in the lumber business I make them at odd times. Not considering my time, they cost me about 60c each. I make mine with glass sides and wooden panels, which is a lot of help, as you can see their progress without disturbing them and know when they are ready for supers. Of course, I buy my sections as I run for section honey exclusively.
Mississippi.

Answers:—I heartily sympathize with you in your struggle against swarming. I've been fighting it for years and am not through yet. Cutting out cells does sometimes and sometimes not. You can shake swarms, but it is a good deal like letting the bees swarm. Cutting out drone comb may help, but will not stop swarming. If you exchange the old queen for a young one about the time swarming begins, you are safe from swarming till another year. One of the best ways to avoid swarming is to run for extracted honey and use the Demaree plan. Just before swarming put all the brood but one frame in a second story over an excluder, leaving the queen below with one frame of brood and empty combs or frames filled with foundation.

Miscellaneous Questions

1. Will hen lice bother bees if one has them in a *house* apiary in the second story of a chicken establishment?

2. In winter if bees run out of honey stores will they feed upon the stored pollen? Is it as good as the honey stores?

3. In giving bees candy for winter, would it be all right to pour the candy right in the empty combs while soft, or would it be better to insert the sheets of candy between the frames?

4. Will chickens bother bees

5. How many hives do you think I could keep in my apiary here in Spokane. There are about a dozen good parks where there is a constant blooming of clover, domesticated flowers and trees. I live on the edge of one of the parks. There are practically no others here who keep bees.
Washington.

Answers:—1. I never have heard of bees being troubled by such lice.

2. No, when the honey is all gone they will starve to death, leaving plenty of pollen in the hive.

3. It would be all right if you could get the candy into the cells, but I don't think you can.

4. Generally not. Some report that they eat drones, and there have been a very few reports of their eating workers.

5. I could hardly make a safe guess. Probably 50; possibly 100

Cellaring Bees—Introducing

1. Is it a good plan to winter bees outside up to December 1st, in boxes filled with sawdust, 6 inches of sawdust under hives and all around except in the front, which is covered with very thick paper, a super containing a thick cusion of chaff on top of each hive and a roof above to shelter the whole from snow or rain from December 1st to March 1st. I will winter them in a cellar according to directions in "Wintering of Bees" by A. I. Root. On March 1st I will put them in sawdust again as described above and leave them in it throughout the summer, or till next December.

2. Will it hurt the bees if in Jenuary I give them two combs taken out of hives in August, the cells partly filled with honey but unsealed. Does that unsealed honey ripen in the hive when I put it away. The hive is in the house

3. In order not to stop the queen from laying, I want to introduce during honey flow, a tested queen thus: Brood chamber is divided into two equal compartments by a

zinc queen-excluder fitting so well under hive cover and all around that the queen in one compartment cannot go into the other, not even by the entrance, the inside of it is covered with a piece of queen excluder. The cage containing new queen is inserted as it reached me from the mail. Five days later I take out the old queen and kill her and remove queen excluder, and will look whether new queen is in. What do you think? Or would it be better later in the afternoon to remove old queen and put cage of new queen in the middle of brood chamber?

4. Will this tested queen lay as soon as she is out of the cage? Montana.

Answers:—1. If the bees have a good flight December 1st, it will be all right; if not, it will be better to put them in the cellar directly after they have their last flight.

2. Any disturbance in winter is bad for the bees, although it will be better to disturb them than to let them starve. Unsealed honey is not so good for winter and it does not ripen in the house as well as when the bees are on it.

3. If the new queen gets out of the cage before the old queen is killed, she will very likely be killed by the bees in spite of the queen excluder.

4. She sometimes begins laying the same day she is out of the cage and sometimes not for two or three days or longer.

Buying Swarms and Dividing

1. Can I divide stray swarms, putting in frames with foundation, say about one-half to each swarm and put a queen in the new colony?

2. Will the new colony have to be kept closed after dividing?

3. Can I start a good swarm with one nucleus and queen. If so, how should I proceed?

4. I can get new swarms from $1.50 to $2.00. Is that too much?

5. How late would it be safe to divide and also to buy queen? Our seasons are long here. The 10th of October is a very early frost. Cotton blooming till frost.

Oklahoma.

Answers:—1. Yes you can divide and have each one a good colony if the division be made early enough and the season be good. Leave the old queen in the one that is left on the old stand, and the part that is put onthe new stand will more readily accet a queen, for the older, or field bees will all go to the old stand, and the younger bees are better about accepting a queen.

2. Yes, you may do well to keep the bees fastened in for 2 or 3 days in the hive that is put on the new stand, and then less of them will return to the old place. If, however, you put one or two frames more than the half on the new stand (of course, with their adhering bees) then it may not be necessary to fasten the bees in. For some reason the bigger the lot of bees and brood the less inclination to return to the old place.

3. Yes, you can start a colony with a one-frame nucleus and a queen, but it will take a lot of boosting to have it a good colony before winter. Of course, it makes a difference when the start is made, and if made early enough, with a good force of bees to cover the one frame, in a good season it may need no help. Otherwise, the way to proceed is to give it a frame of brood about once in ten days until it has at least four frames of brood well covered with bees, and then it will be able to take care of itself.

4. All depends upon prices in your locality; but the probability is that the figures named are none too high.

5. I don't know just how late it might be safe to divide. If the flow continues until Oct. 10th, and a laying queen is furnished, you might risk a division as late as Sept. 1st to 10th, provide the colony be strong with plenty of brood.

Part of the Haley Crum Apiary at Crawford, Neb.

Apiary of H. O. Bader at Browning, Ill.

Crooked Combs

1. I bought 15 colonies of bees last fall, and they were on crooked combs. I cannot take the frames out without tearing the combs. The moths are getting into some of them. What must I do? How is the best way to get them on straight combs when you haven't any extra ones?

2. When is the best time to divide colonies; in the spring or fall? Georgia.

Answers.—1. Better leave them to winter as they are. Then when bees begin to gather next year—say in fruit bloom—try if you can find one frame somewhere in the hive that you can take out. If so, then by a little cutting you may continue to take out adjoining frames, crowding each comb into its frame, cutting away attachments wherever necessary. It may be, however, that the combs are built in too crooked for this; in which case wait until the bees swarm; hive the swarm on frames filled with foundation, and 21 days later cut up the old combs and melt them, adding the bees to the swarm.

In general it may be said that the way to get straight combs is to let the bees build them on frames filled with foundation.

2. In spring or early summer, at the time when bees swarm naturally.

Bees Carried Out—Increasing

1. I have one colony that is carrying out brood in all stages of development, some alive with wings almost developed. Can you tell me what is wrong?

2. Is it profitable to buy nuclei and queens in September to increase the number of colonies? Iowa.

Answers —1. One guess is that the larvæ of the bee-moth, or wax-worms, have mutilated the young bees with their galleries, and the bees carry them out. Another is that the bees are driving out the drones and destroying the drone larvæ.

2. Generally it is better to get them at the beginning of the season.

Arranging Feed—Feeding in Spring

1. Do you think it would pay me to go through all of my colonies this fall after I think the honey flow is all over for this year and put the honey that is above down

in the lower story so it would be closer to the bees?

2. Do you think it would pay to feed the bees in the spring, using the H. H. Thale feeder to get lots of young bees ready for the flow; begin to feed them so as to have lots of young bees by the time that the alfalfa comes into bloom. ARIZONA.

ANSWERS.—1. That depends. If the bees have had their own way they are likely to have the honey where it is best for them. If, however, by some means the honey is scattered in two stories, then try to get it compact in one story.

2. It will pay if there is nothing the bees can gather; otherwise not.

Sweet Clover—Bees in a Porch

1. There is not a half acre of white or alsike clover within 3 miles. Would it be profitable to sow 15 or 20 acres?

2. How many acres will it take for 40 colonies?

3. What plant would you advise to sow for bees only?

4. I tried having queens fertilized over a queen-excluder, but failed. They kill her before she becomes fertilized. Why do you think I failed?

5. I have a swarm of bees in a porch, and have tried using a bee-escape to get them out, but failed. They would all crowd to the escape and close it up. What way would you recommend without doing any damage to the porch? I intend to allow the bees to rob it after I have the swarm out.

6. What size entrance would you advise for winter?

7. Are the Cyprians better honey gatherers than the Italians? ILLINOIS.

ANSWERS.—1. Just for the honey alone that the bees would get, it would not pay at all. But if you take into account the additional gain from hay and pasturage, it might pay well.

2. I don't know. At a guess I should say that during the time of its bloom 12 acres of alsike and three times as much white clover might keep 40 colonies busy. But that may be a very wild guess.

3. It is not likely you will find any plant that will pay with its honey alone. Likely sweet clover will come as near to it as any.

4. I don't know. They fail for me the same way, although sometimes I find a queen successfully reared in an upper story without any intention on my part.

5. You probably used a Porter escape. If you use a cone escape of wire-cloth it will not be clogged. Sometimes, however, especially if the cone is small, the bees collect at the apex and find their way back. You can help to prevent this by using a double cone, one 4 to 6 inches high, and a larger one over it.

6. For cellar, the larger the better. Outdoors ⅜-inch deep full width of hive is favored by many, but opinions differ.

7. They are not generally considered better.

REPORTS AND EXPERIENCES

Followed Dr. Miller's Advice

You will remember that I asked your advice about putting my bees in the cellar and feeding A sugar in the late fall or early part of the winter of 1912. You advised me to do so and report.

I did not lose a colony after putting them in and feeding A sugar as you advised, and they did fairly well last year, 1913. I have 25 colonies in the cellar at this time, and am feeding all that are short on sugar. It works well if kept dry, but it cakes hard if it gets damp. If it gets hard I grind it up again and put it back.

On page 413 of the American Bee Journal for December, 1913, Mr. Doolittle says where anything is to be gained by disturbing bees in winter it is all right to disturb them. I gained four colonies by disturbing them Nov. 10, 1913. A farmer gave me four colonies in old box hives, so old that they would not stand handling, so I put frames containing pollen and honey in four hives and transferred the bees from the old box hives to the ones I had fixed to receive them, and brought them home and put them in the cellar and they did finely. A. J. TOBEY.

Elmira, N. Y., Feb. 2.

Too Dry for Bees

We have had a drouth throughout the whole summer, the bees hardly finding enough to make a living until the month of August. We have had good rains this week The bees are doing nicely now I only have 11 colonies. PHILIP HEINTZ, JR.

Jefferson Barracks, Mo.

Faces Prospect of Feeding for Winter

There has not been any rain here to speak of since April 20, less than an inch has fallen since then. There was not any white clover, as it was all fall killed last year; the prospect for a fall flow is very poor.

Last year I secured 1000 pounds of extracted honey and 500 pounds of comb from 27 colonies, spring count, and increased to 48 colonies. They wintered well and built up strong this spring, but there was not anything for them to gather.

I have had to feed to keep them from starving. I examined them about two weeks ago and found them almost starved; nothing but a very little sealed brood, no eggs or larvæ, and several of them were taking out the sealed brood. I will have to continue to feed, and expect to feed for winter. I am glad this condition does not exist all over. JAMES T. JOHNSON

Percy, Ill. July 4.

First Favorable Illinois Report

I was quite busy for a while in June. I had 76 swarms in four days. I had 12 swarms unite, making a bulk of five bushels of bees filling six hives, some of them double and some with big caps holding a bushel each.

About a week ago I had another experience. Some one opened my bee-house and exposed 90 supers to my 200 colonies of bees. They cleaned out 33 and damaged the others some. ANDREW SVERKERSON.

Oregon, Ill., Aug. 10.

Failure for Three Years

Bees have been a failure in this part of the country. I haven't had any honey for the last three years. Very few bees around here. JOHN A. BLOCHER.

Shirley, Ill.

Large Hives

That article of Mr. Barone on large hives is all right. It was the big hives which gave me the surplus. The 8 frames did nothing—not a half crop with me. The big hives need no feed this fall; they are chock-full.

Moorland, Iowa, Sept. 1. J. P. BLUNK.

Will Go Into Winter Well Supplied

We have had a very good honey flow this year from poplar; also basswood and sourwood produced some, but ivy or "little laurel" produced some which came between linden and poplar which was bitter. When I found this was coming in the gap between poplar and sourwood, I raised up cases which were finished and slid empty cases between to catch this which was streaked with this poisonous and bitter honey, which I will now use for winter stores.

It appears that the fall flow will not be good, but the white and purple asters are just now about to bloom. When these are good the bees generally fill up well about frost I am now doubling up and getting ready for winter.

I have tried to improve my bees by cutting out all objectionable queens and giving the very best of young queens reared from the ones that produced the most honey, all other advantages considered. I think almost all of the bees in this part will be in good condition for winter. R. A. SHULTS.

Cosby, Tenn., Sept. 18.

Making "Clouded" Hives

I notice in Mr. J. M. Killian's hive exhibit on page 418 of the December issue of the

APIARY OF A. SVERKERSON AT OREGON, ILL.; ONE OF THE VERY FEW ILLINOIS PIARIE RRPORTING A CROP THIS SEASON

Bee Journal, some clouded bee hives in imitation of the smoke of the pine knots of about 50 years ago. In this picture it looks as though the clouded markings were done with paint and brush W. Z. Hutchinson also used to paint hives in that manner. But the best way to do it is with a kereosene lamp. Make a chimney of tin to fit the lamp that runs up slim to the top, and having the hole at the top about ⅞ or ½ inch in diameter. Then after the hive is painted white and before the paint has had time to dry, hang the hive up on a peg so that the lamp can be passed back and forth under it. Keep the blaze of the lamp turned low until a hive is ready to be smoked, and then turn on the blaze suddenly and a cloud of black smoke will be produced. Raise the lamp up and down so as to make the cloud dark in some places and light in others. Keep the lamp wick turned low while arranging another side to be smoked.

In this way hives can be painted as beautifully as the frost on a window or the snowflake on paper or granite ware. I painted hives that way for about 20 years, but of late I have come to the conclusion that hives should not be painted at all. It is pleasanter to see fine healthy colonies than the neatness that paint produces

Owensmouth, Calif. C. W. Dayton.

The Foulbrood Situation

On page 48 of the February issue of the American Bee Journal, Mr Louis H Scholl gives the old, old story we hear so often of lack of appropriation from the State to carry on our inspection work. He says they have a good law in Texas; all are, but the trouble with all laws so far is that there is nothing binding on the beekeeper.

The inspector calls upon him, inspects his bees, finds a little disease, shows the beekeeper how to recognize the disease, treats the diseased colonies and informs the beekeeper that he must have his yard clear of disease when he next comes, or he will burn the diseased colonies up (which I understand, by law, he has no right to do, whether diseased or not).

The inspector takes several dollars of the State's money for his job. The beekeeper may thereafter entirely neglect his bees He either does not care or depends upon the inspector to look after them. The inspector has simply done a little "necessary work," and used a little "moral suasion" on the beekeeper. It is evident to suppress or eradicate foulbrood every beekeeper must be his own inspector. We put a license on fishing and hunting, why not on beekeeping so a man to keep bees lawfully must have a permit to do so. On page 855, Dec. 1 issue of Gleanings in Bee Culture, I proposed a new foulbrood legislation which please see. If this or a similar law is in force in a State for several years, it will have no foulbrood None of the present laws will do this, at least they have not H. E Harrington.

Yacolt, Wash.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Phelps' Golden Italian Queens will please you.

Bees and Queens from my New Jersey apiary. J. H M Cook.
1Atf 70 Cortland St., New York City.

For Sale—Choice Golden Queens that produce Golden bees equal to any
Wm. S. Barnett, Barnetts, Virginia

Pure Tunisian Queens, tested, $1.00; 2-lb. bees with tested queen, $1 00 Safe arrival guaranteed. Lenoel, Nabeul, Tunis.

Golden all-over Queens Untested, $1.00. Tested, $1.00 Breeders, $5 00 and $10.
Robert Inghram, Sycamore, Pa.

A Limited number of Golden Italian Queens during October, 50 cts. each.
J. T. Elkinton, Jennings, La.

Untested Queens, 75c each; $7.50 per doz. Nuclei $1 25 per frame. Bees, $1.50 per pound. Full colonies, 8 frame, $6.50; 10-frame, $7.50.
Stover Apiaries, Mayhew, Miss.

Guaranteed purely mated select untested queens, same as advertised before at 50 cts. each. Queens by return mail.
J. M. Gingerich, Arthur, Ill.

Queens, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12 Safe arrival and satisfaction guaranteed. H C. Clemons, Boyd, Ky.

We Will be in the field with good Italian Queens in June for $1.00 each; 6 for $5 00. Two-frame nuclei in June without queen, $2 50; with queen, $1 00 extra.
D. J Blocher, Pearl City, Ill.

Phelps' Golden Italian Bees are hustlers.

Italian Queens, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or $7.25 per dozen. Safe arrival guaranteed.
W. W. Talley, Queen Breeder,
3Atf Rt. 4, Greenville, Ala.

Pure Golden Queens, the best that twelve years can produce. Untested, $1.50 each, Select tested, $3.00 each Breeders, $5.00 to $50. Send for booklet on "Bees and Diseases." Geo. M. Steele,
30 South 40th St., Philadelphia, Penna.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Golden and 3 banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

For Sale.—Three-banded Italian Queens, bred from the best honey-gathering strains, that are also hardy and gentle. Untested queens, 75c; six $4 25; 12, $8 00. Tested, $1.25; 6, $7.00; 12, $12. For select queens, add 25c each to above prices Breeding queens, $3.00 to $5.00 each. For queens in larger quantities write for prices. Robt B Spicer,
Wharton, N. J.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3 00; Breeders, $5.00 and $10 C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

Quirin's Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G. Quirin,
The Queen Breeder. Bellevue, Ohio.

HONEY AND BEESWAX

Wanted—Comb, extracted honey, and beeswax R. A Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

Null's Famous Melilotus Honey, 10 lb. pail prepaid any express office east of the Rocky Mts., $1.50. Null Co., Demopolis, Ala

Light amber honey 8½c a lb California sage honey, 10c a lb. 2 60-lb cans to a case. Sample of either 10c. I. J Stringham,
105 Park Place, New York, N Y.

The Beekeepers' Review is now owned and published by the honey producers themselves It is *the* paper *all* honey producers should support. Eight months' trial subscription, beginning with the May number, for only 5 c Sample copy free. Address, The Beekeepers' Review, Northstar, Mich

For Sale—Horsemint honey, also dark from Huckleberry. Put up in new 60-pound cans. Write for prices.
A. L. Krueger, New Ulm, Tex.

For Sale—Light extracted honey; two 60-pound cans to case, new cans, 8½ cts.; in 10 case lots at 8 cts per pound, f. o b. here.
H G. Quirin, Bellevue, Ohio.

For Sale—Raspberry, Basswood No. 1 white comb, $3.00 per case; fancy, $3 25; 24 Danz sec. to case, 6 to 9 cases to carrier. Extracted, 120-lb. cases at 9 cts
Wiley A. Latshaw, Clarion, Mich.

Raspberry Honey—Left on the hives until it was all sealed and thoroughly ripened It is thick, rich, and delicious Put up for sale in new 60-lb tin cans. Price, $6.00 per can Sample by mail, 10 cts., which may be deducted from order for honey.
Elmer Hutchinson, R. D. 2, Lake City, Mich.

SUPPLIES.

Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

Better Hives for Less Money—Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

The A. I. Root Company's Canadian House, Dadant's Foundation. Poultry, Supplies, Seeds. Write for catalog.
The Chas. E. Hopper Co.,
185 Wright Ave., Toronto, Ont.

MISCELLANEOUS

Original and unique honey advertising post cards (photos). Write Dr. Bonney, Buck Grove, Iowa, for samples.

I Got 100 pounds of comb honey per colony; my neighbors got none. I'll tell you how for 25c. O N. Baldwin, Baxter, Kan.

You have been thinking for some time you would like to become a National Beekeepers' Association member. Now is your time; a year's dues to the National and eight months' subscription to our own paper, the Beekeepers' Review, beginning with the May number, both for only a dollar. Address with remittance, The Beekeepers' Review, Northstar, Mich.

POULTRY

For Sale—Single Comb Buff Orpington eggs for hatching, pure bloods; $1 00 per 15 or $5 00 per hundred. Satisfaction Guaranteed.
W. H. Payne, Hamilton, Ill.

FOR SALE

For Sale—1000 colonies of bees in 10 apiaries. Located in Imperial Valley where crop failure is unknown. Owner started without capital less than five years ago. Is now retiring from active business. Profits for five years have averaged more than 100 percent annually.
J. Edgar Ross, Brawley, Calif.

WANTED

Wanted—From 4000 lbs to carload of comb and extracted. Iowa, Wisconsin or Michigan honey. Quote me prices
W. H. Hyde, New Canton, Ill.

SITUATIONS.

Help Wanted—We desire an experienced apiarist to run from one to three hundred colonies of bees for three years on shares for one-half crop and increase. State age, nationality, and former experience in first letter. Spencer Apiaries Co., Nordhoff, Cal.

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TRADE MARK PORTER REGISTERED

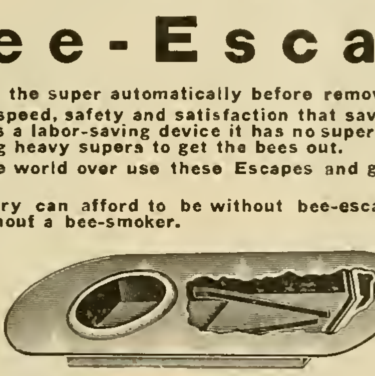
Bee-Escape

For getting bees out of the super automatically before removal from the hive.

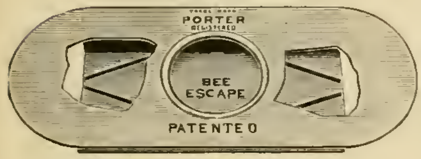
It is a combination of speed, safety and satisfaction that saves honey, time and money for the user. As a labor-saving device it has no superior. Avoids "breaking the back" in shaking heavy supers to get the bees out.

Leading beekeepers the world over use these Escapes and give them their unqualified endorsement.

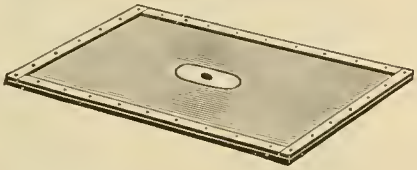
No well-regulated apiary can afford to be without bee-escapes any more than it can afford to be without a bee-smoker.



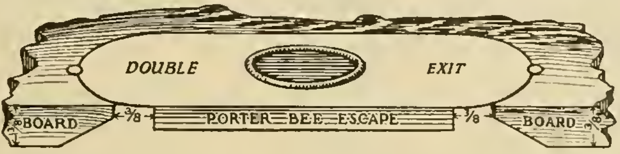
Single Escape. Prices: Each, 15 cents; per dozen, $1.65



Double Escape. Prices: Each, 20 cents; Per dozen, $2.25



Escape-board with Porter Escape in position for use



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All Porter Escapes fit the same size opening in Escape-board.
For sale everywhere by dealers in Beekeepers' Supplies.
If you have no dealer, order from factory, with full instructions.

R. & E. C. PORTER, Manufacturers,
LEWISTOWN, ILL., U. S. A.

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SUPPLY
YOUR HONEY CUSTOMERS
WITH
Fine White Alfalfa
CAN SUPPLY ANY QUANTITY
Extracted honey packed in 60, 10, 5, and 2½ lb. cans
Send for sample and prices today
DADANT & SONS, Hamilton, Ill.

Honey and Beeswax

CHICAGO, Sept. 15.—There is a firm feeling in the choice grades of white comb honey and sales are now being made chiefly at 16c per pound, and where the wood section is allowed for it is bringing 17c per pound. The No. 1 and off grades bring from 1@3c per pound less. Amber grades are ranging from 10@13 per pound. Extracted white grades such as clover, linden and button sage sell chiefly at 9c per pound, with the western white alfalfa selling at 7@8c per pound. Amber grades range from 6@8c per pound, according to color and quality. Beeswax market is easier, but yellow wax free from sediment brings 34@35c per pound.
R. A. BURNETT & CO.

CINCINNATI, Sept. 18.—There is very little demand for honey at the present time. However, we are selling our comb honey from $3.00 to $4.00 per case, according to the quality and who is buying it Our extracted honey, for the best white 7½@10c in crates of 2 60 pound cans; for amber extracted from 5@7½c. For choice bright yellow beeswax we are paying 30c a pound delivered here. THE FRED W. MUTH CO.

KANSAS CITY, MO., Sept 15.—The receipts of comb honey are liberal. The demand is good There is no change in extracted. The receipts of a new crop are very light, with demand improving. We quote No. 1 white comb, 24 section cases, $3.15 to $3 25; No. 2, $2 75 to $3 00. No 1 amber, $3.00; No 2, $2.50 to $2.75. Extracted, white, per pound, 8c; amber, 7@7½c; dark, 4½@5c. Beeswax, No. 1, 28c; No. 2, 25c.
C. C. CLEMONS PRODUCE COMPANY.

BOSTON, Sept. 17.—No. 1 and fancy new white comb, 16@17c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c. BLAKE,-LEE COMPANY.

SAN FRANCISCO, Sept. 20.—Comb honey is not being offered, and the little that is taken up at 16c for fancy. Water white extracted, 7@7½c; amber, 5@6½c; dark, 4@4½c. Little or no demand. Beeswax, 30c for light, 24@26c for dark. JOHN C. FROHLIGER.

DENVER, Sept. 15.—We have no more old stock of comb honey to offer. We are selling extracted in a jobbing way at the following prices: White extracted, 8c; light amber, 7c. We pay 32c per pound in cash and 43c in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

INDIANAPOLIS, Sept. 17.—There seems to be quite a demand for honey at this time. Some shipments of new honey have arrived. We quote best white comb, $3 75 per case; white extracted in 60-pound cans, 9½@10½c. Beeswax brings 31@32c cash, 33@34c in exchange for bee-supplies.
WALTER S POUDER.

LOS ANGELES, Sept. 17—The supply of honey in California is considerably in excess of the demand, which has been extremely light this season. The average prices received for honey so far this year have been about 1c per pound less than were received last year, but this has not resulted in a larger amount of business. Price on wax has dropped 2 or 3c per pound since the keen demand for foundation purposes has ceased. We quote the market on honey in carload lots for eastern shipment about as follows: Fancy water-white sage honey, 7¼c; light amber sage, 5½c; light amber alfalfa, 5c. HAMILTON & MENDERSON.

NEW YORK, Sept. 17.—There is very little new crop of comb honey arriving as yet, and owing to the war there is no demand to speak of. In a small way, white honey is selling all the way from 13@15c per pound, according to quality and style of package: lower grades at from 11@12c. There is no buckwheat on the market as yet. As to extracted, we have never seen the market in such condition as it is at present. Large quantities of West India honey are coming in here, and are offered and sold at all kinds of prices, and we are advising southern beekeepers to write us before making any shipments, as we may not be able to realize prices that they expect us to get, and we do not wish them to be dissatisfied afterwards.
HILDRETH & SEGELKEN.

Our Special Big Four Magazine Offer!

Woman's World–Household–People's Popular Monthly–Farm Life

A special arrangement secured by the American Bee Journal, enables us to offer to our subscribers for a limited time only the American Bee Journal for one year with a full year's subscription to all four of the above high-grade publications, at the special price of **$1.30.**

Four Big Magazines and American Bee Journal All Five for $1.30

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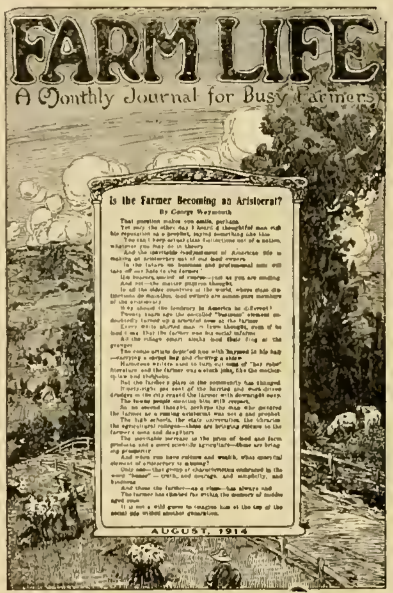
WOMAN'S WORLD has more subscribers than any other magazine published, over two million a month. Its articles, its stories, its illustrations, are the best that money can buy. It is a magazine to be compared with any home magazine in the country, regardless of price, without fear of contradiction of any claims we make for it. Its stories are by authors known the world over.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A Monthly Journal for Busy Farmers
Is the Farmer Becoming an Aristocrat?
AUGUST, 1914

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PEOPLE'S POPULAR MONTHLY is one of the greatest popular fiction and home magazines published. Contains complete stories each issue.

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THE HOUSEHOLD—A favorite magazine in a million homes. Every issue has many interesting features.

This offer supplies you with a Magazine of the best quality, giving you a year's supply of good literature at a saving of one-half cost

Thisis the **best** and biggest combination clubbing offer ever presented to the public. The pubisher of the American Bee Journal is glad to announce to his subscribers the completion of this splendid arrangement, whereby he can offer such an excellent list of publications in connection with a year's subscription to the American Bee Journal at the remarkable price of $1.30 for all five. This offer is good for a **short** time only, and may be increased at any time.

AMERICAN BEE JOURNAL, Hamilton, Illinois

An Embarrassing Mistake.—A very young wife in a strange hotel was trying to find her husband. Thinking he was taking a bath, she knocked on the door of the bath-room and said:

"Honey, are you there?"

And a strange masculine voice replied severely:

"Madam, this is not a bee-hive; it's a bath-room."—*National Monthly.*

◆

The Bee.—The bee was born to provide another method for getting stung besides the buying of gold bricks. We have nothing against the bee, although one day last summer the bee had something against us—we think it was a hypodermic needle charged with red pepper. It is not right for a bee to do things behind its back, and a drone-bee who will get up from your anatomy and offer his seat to a tired queen-bee—a thorough business woman that sticks to her task—is mean enough to do anything. The department at Washington, having to do with natural history, ought to lock up such bees in their own cells for carrying concealed weapons. The bee always leaves a good impression behind it.

This beest was first discovered in 492 Bee, see. It is made up of wings, legs, and a hat pin, which is carried very promiscuously in its hip pocket.

The drones will not move about in hot weather, but the queen-bee does its work whether it is warm or not. A bee-ist with 60 queens feels that he has reached the highest pinochle of success in bee-culture.

The social bees make social visits continually, and the bumble-bees bum around all day. Drones, like the rooters at a ball game, make all the noise, but do no work.

A farmer never gives his bees anything for their blood because they have the hives.

Don't monkey with the buzzer, but bee't it.—*Exchange.*

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In Three Volumes

The personal reminiscences of Baron de Méneval, for thirteen years private secretary to Napoleon Bonaparte, bring out, as no history can, many enlightening and interesting side lights on the character of that greatest of leaders. De Méneval's descriptions have the piquancy and interest possible only because he was an actual eyewitness of the scenes and incidents of which he writes. Their reliability and historical interest can be judged by the fact that the very conservative French Academy publicly recommends them.

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I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
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Danzenbaker Bee-Smoker ($1.00)	.80
	$3.60

Or *all* the above in one order to one address *for only $3.00.* (The retail price of the bunch is $4.95.) Address,

GEORGE W. YORK, SANDPOINT, IDAHO

W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

EASTERN Beekeepers

If you are in need of shipping cases, cartons, honey jars, or anything in the supply line, let us quote you on them. No. 25 jars with bronze cap, $1.60 a gross. Five gross, $1.30 a gross. Untested Italians queens, $1.00.

I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

When You Need Queens

We will be pleased to fill your order. Our business of rearing queens was established in 1886. We know what it means to have a good strain of bees and queens that stands second to none. Three-band Italians only—bred for business and free from disease. Tested, $1.00 each. Untested, 75c; $7.00 a doz.

J. W. K. SHAW & CO., Loreauville, La.

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It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

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Gus Dittmer Company

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Perfect sections from young, white, basswood. White Pine Hives and Supers, Excellent Shipping-Cases, Brood-Frames, Separators, etc.
We invite your correspondence.

Guarantee— All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

Page-Kenkel Manufacturing Co.,
New London, Wis.

WANTED

Honey!

Extracted and Comb
Will buy or handle on Commission

Beeswax

Will Pay Highest Prices.

Yours very truly,
HILDRETH & SEGELKEN
265-267 Greenwich St., New York, N. Y.

Try My Bright ITALIAN QUEENS

This is what one customer writes:—

JOSEPHINE, TEX., June 16, 1913.
MR. M. BATES, Greenville, Ala.

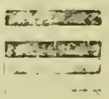
Dear Sir:—I am sending you $0.00 for which please send me 12 Untested Golden Italian Queens. The queens you sent me are fine, and old bee rearers say they are the finest they ever saw. They have surely made a reputation here for you. Several men say they will order queens soon.

A. M. MORRISON.

I have other letters that say the same. Selected Untested, each 60c; Tested, each $1.25; 2-frame nuclei, each $2.50. I guarantee safe arrival and perfect satisfaction.

M. BATES, Route 4, Greenville, Ala.

BEEKEEPERS' SUPPLIES



Such as Winter-cases, Sections, brood-frames of every description, Section holders, Comb Foundation, Supers, Hive-bodies, Smokers, etc.
Get my prices before placing your orders.

R. H. SCHMIDT
R.3, Box 209, Sheboygan, Wis.

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-Page Catalog

Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

C. H. W. WEBER & CO.

CINCINNATI, 2146 Central Avenue, OHIO

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

WE MAKE IT GOOD

THE BEES MAKE IT FAMOUS

The Reputation of

DADANT'S FOUNDATION

Has been built on its merit

It is a Favorite with Beekeepers

BECAUSE

It is so well liked by the BEES

Whether it's a pound or whether it's a ton, every sheet is PERFECT

Satisfaction Guaranteed in Every Way

DADANT & SONS.

HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

NOVEMBER 1914

Mass Agr College apr19
Library Amherst, Mass

Experimental Apiary and National Laboratory at Washington, D. C.

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec14" on your label shows that it is paid to the end of December, 1914.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 5 lines accepted.

DISCOUNTS:

3 times 14c a line   9 times 11c a line
6 " 12c "   12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 23d of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Loog Tongued, The Best Buney-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

☞ **Univeraal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD**

Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913

Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.

STILLWATER, Oct. 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.

(Signed) PROF. E. C. SANBORN,
State Entomologist.

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens. Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n } **ANTHONY BIAGGI,**
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

$ 2 $ A MONTH

buys a Standard Typewriter your choice, Late Style Visibles, Back Spacer, Tabulator, Two-Color Ribbon. Every modern operating convenience. My prices lower than other cash prices Perfect Machines—Fully guaranteed. Ask for Special Five Days Free Trial Offer.

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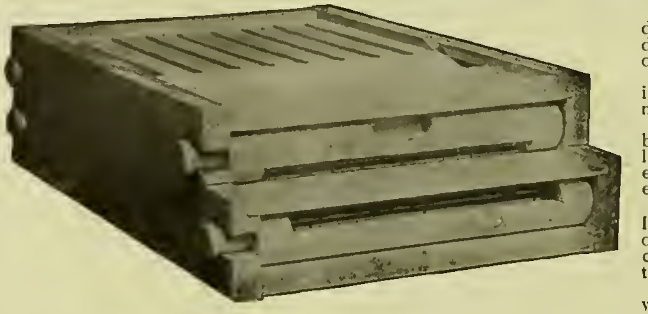


FEATURES OF ADVANTAGE OF THE

ROLLER ENTRANCE BOTTOM BOARD

1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.
2. It controls the mating of the queen so that mismating is prevented.
3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position
4. It sifts automatically undesirable drones out of the hive, and cages them in the drone trap.
5. It permits ample ventilation at the height of the honey-flow.
6. It can be instantly closed when moving bees in and out of cellars or from one yard to another.
7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.
8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.
9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.
10. It is adjustable to make a shallow bottom for summer and a deep one for winter.

It contains many other valuable features which will be apparent to any beekeeper upon investigation, and if it is once tried it will always be used.

8-frame size, $2.00; 10-frame size, $2.50. Italian Queens, Breeders, $10 to $25.

Nothing sold under $10.

CHAS. G. SCHAMU

INVENTOR AND MANUFACTURER   Box 48, **LIVERPOOL, NEW YORK**

PERFECTION IN WAX RENDERING

Has been reached by our process. Ship us **comb and cappings,** and secure highest returns. Write for prices and full information.

THE FRED W. MUTH COMPANY

"The Busy Bee Men"

204 Walnut Street   Cincinnati, Ohio

Comb and Extracted Honey Wanted

SUPPLY

YOUR HONEY CUSTOMERS

WITH

Fine White Alfalfa

CAN SUPPLY ANY QUANTITY

Extracted honey packed in 60, 10, 5, and 2½ lb. cans

Send for sample and prices today

DADANT & SONS, Hamilton, Ill.

CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.

J. C. Frohliger, Berkeley, Calif.
Greater San Francisco

Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery

Read what J. I. Parent, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free

Address, W. F. & JOHN BARNES,
995 Ruby St., Rockford, Ill.

Please mention Am. Bee Journal when writing.

Try My Famous Queens
From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan
Bred in Separate Yards

Untested, one, 75c; 6, $4.25; 12, $7.50; 25 14.25; 100, $50. Tested, one, $1.50; six, $8.00; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two-frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

Statement of Ownership, Management, Circulation, Etc.,

of the American Bee Journal, published monthly at Hamilton, Illinois.

Editor—C. P. Dadant.
Managing Editor—M. G. Dadant.
Owner—C. P. Dadant, Hamilton, Ill.

Known bondholders, mortgagees, and other security holders holding one percent or more of total amount of bonds, mortgages or securities—None.

[Signed] M. G. Dadant, *Manager*.

Sworn to and subscribed before me this 1st day of October, 1914.

[SEAL.] R. R. Wallace,
Notary Public.

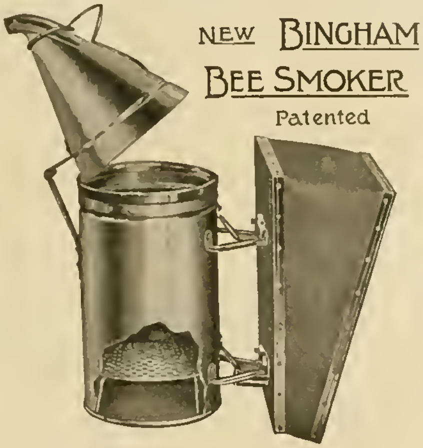
My Commission expires Sept. 21, 1917.

ARE YOU GOING TO BUY LAND?

If so, get a copy of our Journal first. It has lands advertised in it from nearly every State in the Union, so that you can find just what you want. It reaches 67,000 readers each issue Advertising rates 2c per word. Send 20c for six months' trial subscription. It will be stopped at the end of six months.

Farm and Real Estate Journal
Traer, Iowa

Bingham Bee Smoker



NEW BINGHAM
BEE SMOKER
Patented

Nearly Forty Years On the Market

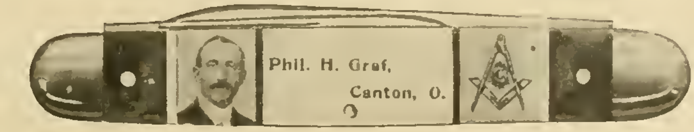
The original bee smoker was invented and patented by Mr. T. F. Bingham in 1878, 1882, 1892 and 1903. The Bingham Smoker is up to date, and the standard in this and many foreign countries. It has recently been improved, and is the all-important tool of the most extensive honey producers of the world. No other invention in apiculture has been so important, as little could be accomplished without the bee smoker. For sale direct or at your dealers. Postage extra.

Smoke Engine	4	inch stove. Weight	1¾ pounds.	$1.25
Doctor	3½	" " "	1⅝ "	.85
Conqueror	3	" " "	1½ "	.75
Little Wonder	2½	" " "	1 "	.50

Two Largest Sizes With Hinged Cover

A. G. WOODMAN COMPANY
Grand Rapids, Michigan

BEE-KEEPER'S NOVELTY POCKET-KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size. We have succeeded in getting this knife made in lots from genuine car-van steel. It is especially well tempered and keeps its edge remarkably. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given Free as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

Untested Italian Queen-Bees

OUR STANDARD BRED
6 Queens for $6.00;
3 for $3.50; 1 for $1.25
American Bee Journal, Hamilton, Illinois

"Falcon" QUEENS

Three-band and Golden Italians, Caucasians and Carniolans

	Untested, July 1st to Oct. 1st,	one, $ .85;	six, $4 50;	twelve, $ 8 50
SELECT	Untested, July 1st to Oct. 1st,	one, 1.00;	six, 5.50;	twelve. 10.00
	Tested, $1.50 each. Select tested, 2.00.			

All queens are reared in strong and vigorous colonies, and mated from populous nuclei.
Instructions for introducing are to be found on the reverse side of the cage cover.
A full line of bee supplies and foundation manufactured by us at Falconer, N. Y.
Write for samples of our foundation and Red Catalog, postpaid.

WESTERN DISTRIBUTERS:—C. C. Clemons, Bee Supply Co., 128-130 Grand Ave., Kansas City, Missouri

OTHER DEALERS EVERYWHERE

Red Catalog, postpaid **"Simplified Beekeeping," postpaid**

W. T. FALCONER MFG. CO., - FALCONER N. Y.

Where the good bee hives come from

HONEY LABELS

Owing to the many enquiries we have had for Honey Labels, we have put in a line of these for the convenience of our readers.

Send for catalog, giving samples of labels with postpaid prices. We also list **Envelopes and printed Letter Heads.**

American Bee Journal, Hamilton, Illinois.

PONTIAC ENGRAVING CO.
ARTISTS
ENGRAVERS-ELECTROTYPERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

Please mention Am. Bee Journal when writing.

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years. In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority.

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL — Breeding. — Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

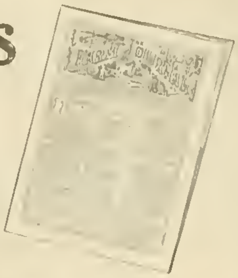
SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

Special Club for Bee-Keepers



You cannot buy from any source or at any price a finer combination of bee literature and general reading. The standard quality of both papers and books shown here, with the extraordinarily low cost, make a most attractive opportunity.

THE FARM JOURNAL

is unquestionably the leading agricultural and home magazine. It goes every month into more than 800,000 homes in every State in the Union, Canada, Mexico, and foreign countries. It was first issued in March, 1877. Contains from 32 to 80 pages, according to the month. It is printed on good white paper, in large clear type, and freely illustrated.

Illustration from Biggle Bee Book

The Farm Journal is cut to fit all subscribers, not only those of one section. It will be found equally valuable in Maine, Kansas, Pennsylvania, Oregon, or Alabama.

It is timely, treating topics in season only.

It is as practical as a plow and as full of meat as an egg; no dry theory.

It is cheerful, full of life and humor; likes a grin better than a groan.

It guarantees every advertiser to be honest, and was the first paper in the world to do this (October, 1880). All medical advertising is refused.

Few other periodicals, not even religious papers, can compare with it for cleanliness and purity. Consequently, it is the paper for children and young people. It never has to be carried out of the house with the tongs.

The publishers spend all their time and efforts on the paper, to make it brighter and more useful. They publish no other periodical; FARM JOURNAL is not the tail of any kite.

All is crisp, concise and boiled-down, with sparkles of wit here and there, and such a cheerful, happy, sunny spirit throughout, that each page is an inspiration. You would hardly believe that a farm paper could be made so entertaining and readable. It is entirely unlike any other periodical in the world.

We confidently commend it to every farm and village home in America.

We need say nothing of the AMERICAN BEE JOURNAL, with whose excellent qualities you are familiar. Here are our great offers:

Langstroth on the Honey-Bee

This is one of the standard books on bees. It tells in a simple, concise manner just how to keep bees. It was originally written by Rev. L. L. Langstroth, the inventor of the movable-frame hive in 1851. The book has been brought right down to date by those expert bee-keepers—Dadant & Sons—than whom there are no better nor more practical bee-keepers in this or any other country. The book contains nearly 600 pages. It is fully illustrated, and bound in cloth. Every topic is clearly and thoroughly explained, so that by following its instructions no one should fail to be successful with bees. Price, postpaid, $1.20.

Offer No. 1
Farm Journal 5 years ($1.00)
American Bee Journal ($1.00)
BOTH FOR $1.60

Offer No. 2
Farm Journal 5 years ($1.00)
Biggle Bee Book . . ($ .50)
American Bee Journal ($1.00)
ALL FOR $2.00

Offer No. 3
Farm Journal 5 years ($1.00)
Langstroth on the Honey-Bee . . . . . . ($1.20)
American Bee Journal ($1.00)
ALL FOR $2.50

Offer No. 4 (Best of all)
Farm Journal 5 years ($1.00)
American Bee Journal ($1.00)
Langstroth on the Honey-Bee . . . . . . ($1.20)
Biggle Bee Book . . ($ .50)
ALL FOR $2.75

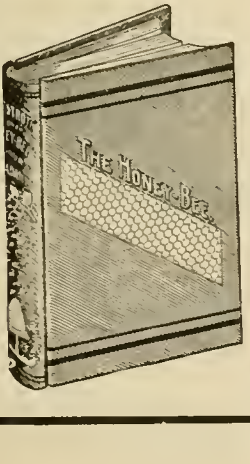
Biggle Bee Book

One of the foremost bee-keepers in the country assisted Judge Biggle in the preparation of the Bee Book, and it has won praises everywhere for its practical character, conciseness, and accuracy.

Contains 136 pages, 19 chapters, and a full index. Profusely illustrated with 65 half-tones from photographs.

All about varieties, hives, swarming, queen rearing, spring and winter care, outapiaries, comb and extracted honey, diseases, enemies. Cooking recipes using honey, complete list of honey plants for different latitudes, calendar for the bee-keeper, etc.

Nothing else in the way of directions is needed to insure success with bees. Price, postpaid, 50 cents.



Read the full descriptions of the two books. Taken together, they are invaluable to every owner of bees, or everyone who expects to establish an apiary, large or small.

Send orders to the American Bee Journal, Hamilton, Ills., or to the Farm Journal, Washington Square, Philadelphia.

Use the Coupon ☛

To Publishers American Bee Journal,
Hamilton, Ills.

For the enclosed $ send me your offer No. , as advertised, fully postpaid, entering my subscription to the American Bee Journal 1 year and the Farm Journal 5 years.

My Name is

R. F. D. or Street

P. O. State

These Experts Have a Hand in All the Lewis Beeware You Buy

IS THIS WORTH ANYTHING TO YOU?

When you consider buying Bee Supplies, ask yourself these questions:

Where can I buy (not the most) the best for my money?
What kind of material will I get?
What sort of workmanship will be furnished?
How will these goods be packed?
Who are making and standing back of these goods?
What are their facilities for distribution?

HERE IS THE ANSWER:

The G. B. Lewis Company has been in the business of manufacturing bee supplies for forty-one years. It has grown from a carpenter shop to a plant covering nearly six acres of ground, with an annual output of 30,000,000 sections and 100,000 hives. During all the years, in the face of advancing prices on material and labor, the scarcity of suitable lumber, competition of cheaper and inferior goods, it has had many opportunities to cheapen its product at the expense of quality. **But it has steadfastly stood by its guns, maintaining one standard of quality and workmanship. LEWIS BEEWARE** is the same today, was the same yesterday, and will be the same tomorrow.

Now, what about the workmanship in these goods?—What skill do they represent? In a word, what is their personality? The business has been under one management, and the lumber has been bought by one buyer for twenty years. He is still managing the business and buying the lumber. The head mechanic came into the factory when a boy. He has been supervising for thirty-six years. The Bee-hive superintendent has been devoting his life to making Bee-hives for thirty years. The Section boss has been watching the Lewis Section machinery and output for twenty-nine years. These men represent the skill, the brains and the conscience that go in the goods. We ask you again—**DOES THIS MEAN ANYTHING TO YOU?**

A WORD ABOUT LEWIS PACKING—The Lewis Company also make a business of Packing Boxes; therefore, they know how goods should be packed. A patent woven wood and wire package, made only by the Lewis Company, is employed largely in packing. This makes the package light, compact and damage proof.

WHO IS BACK OF THESE GOODS?—The **LEWIS COMPANY** has for forty-one years stood back of every transaction it has ever made. On examination of Lewis goods, if they are not as represented, you are not asked or expected to keep them. This is our guarantee, and applies to Lewis distributing houses as well as the factory. The Lewis Company has a reputation for fair and square dealing second to none.

LEWIS BEEWARE may be obtained almost at your own door. Thirty distributing houses located at convenient points throughout the United States and foreign countries are there to serve you.

Our 1915 catalog will be ready for distribution at the usual time. Send for one giving name of distributer nearest to you.

G. B. LEWIS COMPANY

Manufacturers of Lewis Beeware

Watertown, Wisconsin, U. S. A.

AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., NOVEMBER, 1914

Vol. LIV.—No. 11

EDITORIAL COMMENTS

Bee Meetings

The following meetings are already scheduled for the future as indicated. Secretaries are urged to write, giving date of meetings so that they may appear in these columns:

Louisiana Fair and Beekeepers' Celebration, Shreveport, Nov. 9.
Ontario meeting, Toronto, Nov. 11, 12, and 13.
Quebec meeting, Montreal, Nov. 11 and 12.
Indiana State meeting, Indianapolis, Nov. 16 and 17.
Iowa State meeeting, Ames, Nov. 17 and 18.
Illinois State meeting, Springfield, Nov. 19 and 20.
Wisconsin State meeting, Madison, Nov. 24 and 25.
Minnesota State meeting, Minneapolis, Dec. 2 and 3.
Missouri State meeting, St. Joseph, Dec. 7 and 8.
Akron, N. Y., meeting, Akron, Dec. 15.

The Worst Season in 51

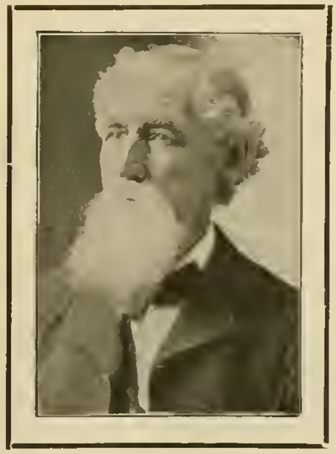
We have kept bees for 51 consecutive seasons in this county, and this has been the worst one. The excessive drouth of 1913 continued until far into the summer of 1914. There has been no white clover, and there is none yet in this vicinity. The only honey harvested has been gathered from persicarias and asters. We have had to feed thousands of pounds of sugar syrup, and during every month of the the summer.

Our beekeeping experience covers almost three generations. We hope not to see the like again of so steady a failure. At any rate, we are not discouraged for we have more bees than ever.

T. F. BINGHAM

We have just received news of the death, at Sugar City, Colo., of the well-known apiarist and inventor, T. F. Bingham, formerly of Abronia, Mich.

Mr. Bingham was born Jan. 22, 1830, in Woodstock, Vt., and was therefore 84 years old. As a jeweler, he lived at Gowanda, N. Y., for a few years and there began the keeping of bees in Langstroth hives. He later changed his hives to a shallow closed-end frame hive, first with frames 5x22 inches, inside, and later with a much shorter but still very shallow frame. In his first efforts at cellar wintering he maintained that very little ventilation was necessary. But he was soon won over to the ideas of thorough ventilation of cellars. In 1900, he reported having kept his bees in the cellar four days less than five months. This was at Abronia Mich. He was a contributor to the American Bee Journal until 1909.



T. F. BINGHAM.

Mr. Bingham is best known to the beekeeping world by his famous invention of the direct-draft smoker, now known the world over, under his name, as the most practical bee smoker ever invented. He also invented the Bingham honey-knife, the bevel of which plays an important part in the speedy uncapping of surplus honey. Owing to these two inventions which have become so popular, the name "Bingham" is likely to remain a household word in every beekeeper's home.

Matrimony

We have received the announcement of the marriage of Mr. L. V. France, son of the veteran apiarist N. E. France, to Miss Rena Olson, at Madison, Wis. Mr. L. V. France is himself a capable apiarist and a student. Our best wishes go to the young couple.

Comparison of Crops of 1913 and 1914

Farmers' Bulletin No. 620 gives statistics on the honey crops of 1913 14. The average crop per colony in the United States was 40.6 pounds in 1913, and only 31 6 pounds in 1914. But a very interesting feature is that the crop of extracted honey is increasing as compared with both the section honey and chunk honey. This means more honey for the masses.

Scent-Producing Organs of the Honey Bee

We acknowledge with thanks the receipt of another study by that able microscopist, Mr. N. E. McIndoo, of the Bureau of Entomology of Washington, D. C. This paper deals entirely with the morphology of the scent-producing organs. It is accompanied with cuts which give a glimpse of what may be found and is yet hidden in the world of the infinitesimal. It is practically a closed book to our untrained minds. But the specialist will find in it much food for study. Mr. McIndoo is hewing a path to fame. We wish him success.

Foulbrood Laws

Are our foulbrood laws adequate? Do we need to change them? Or would we better off without them?

Considerable opposition has been offered to the enacting of foulbrood laws in our different States, and we meet a beekeeper now and then who thinks the appointment of inspectors is an infringement on liberty and a useless expense. Even in the Old World, where regulations are much more common and more strict than in the United States, some beekeepers have strenuously objected.

However, in practice, it has been found that often the persons who object to inspection are among the few who are too careless or too neglectful to look after their bees. They naturally resent intrusion. In the great majority of cases, not only is the inspector well received, but he is usually sent for, and his visit is desired by the owner who is in doubt as to the existence of disease in his apiary or in his vicinity. The work of inspection has in most cases resolved itself into a pleasant visit and the giving of advice which is thankfully received. There are a few cases where careless owners have refused to act to treat the disease. But they feel themselves so positively in the wrong that it is not difficult to compel them to take radical measures, when they are fully informed that the law is against them.

The most dangerous transgressor is the willing but careless apiarist who, after asking for advice and promising to treat his diseased colonies, either does the work in a slovenly manner or neglects a part of it. I was once told, by a rather prominent apiarist, that he who has had the disease in his apiary once can never get rid of it entirely. This was said in reference to American foulbrood. Yet there is no difficulty in curing bees of that disease completely if the proper thorough treatment is followed. This man was either unable or unwilling to do thorough work, and there was little wonder that he did not succeed.

But our foulbrood laws may be very much improved, especially by making them uniform. What is legal in one State is illegal in another. This should not be. The variation exists not only in laws upon diseases; it extends to almost all human affairs. Marriage and divorce vary, and a young couple that wants to evade the law often does so by moving for a few days to another State. It may take centuries to correct infractions of common sense due to the irregularity of our laws.

But that we are progressing in the regulations concerning the cure of bee diseases does not permit of a doubt. Every State in the Union should have a law on this subject.

Sugar Syrup

Here is another testimony, by J. E. Crane, in Gleanings in Bee Culture, in favor of the 2 to 1 proportion of sugar to water in preparing syrup:

> "I have been in the habit for many years of mixing honey with sugar syrup when feeding in autumn to prevent granulation; but the last two years I have with some hesitation fed the sugar syrup (2 of sugar to 1 of water) without honey, and found no more granulation, either last spring or the year before, than when honey was mixed with the sugar syrup."

Mr. Crane is a very safe authority to rely upon.

Obituary

Dr. Ulrich Kramer, President of the German Swiss Beekeepers' Society, mentioned in our September issue, died in his home at Zurich Aug. 19. We learned this through the British Bee Journal of Oct. 1. He was 70 years old.

National Laboratory

The new Washington laboratory of bee culture is illustrated by two excellent photographs on the front cover of this number. It has been occupied since July 1. Dr. Phillips, apiarist in charge, writes us:

> The laboratory is located in a suburb of Washington named Drummond, across the District line in Maryland. It is located about 7 miles from the center of the city, and the trip can be made easily by electric car (Wisconsin Avenue line, running on F Street). Cars leave 5th and F Streets every 15 minutes during the day. At the end of the car line there is a short walk, the laboratory being next to the last house on the right hand side of the only street in Drummond. All mail, telegrams, express and freight should be sent to the Department of Agriculture, Washington, D. C., as formerly.
>
> This building was constructed for private residence, but is admirably suited to our needs. We have 11 rooms, basement under the entire house and an attic, hot water heat, gas, electric lights, water, sewer and all modern equipment. The house is located on a lot of about three-quarters of an acre, giving us abundant room for the apiary and other outside work. The lot has been beautifully planted by former occupants, so that we have a rather finished establishment, and are not compelled to wait until trees and shrubbery can grow before the place is attractive.
>
> The establisment of this laboratory in the suburbs marks a large step in advance for the investigations in bee culture of this Bureau. We formerly had offices and laboratories in the city with the apiary 8 miles away. Then

Sweet Clover Growing on the Farm of L. A. Syverrud at Canton, S. Dak.

This field of sweet clover was divided in two parts by a fence, as seen back of cows, early last spring, and the cows have kept the clover eaten down, as shown in the foreground, and part of the season they were admitted to this only for one hour per day. They have a good blue grass pasture to run on every day, but will eat sweet clover when they can get it.

the wintering work was carried on at the University of Pennsylvania, Philadelphia, because of a lack of facilities in Washington. Furthermore, the laboratories in Washington were not all in the same building, but were separated about a mile. All of this caused a considerable loss of time and useless expenditure of money, and the placing of all of this work in one place has increased the efficiency of the work incalculably. The wintering work will be carried on in the basement and also on colonies out-of-doors. The instruments adapted to and devised for this work have been removed from Philadelphia, and are now in place in the new laboratory.

Having at last obtained creditable quarters suited to our needs, it will be an exceptional pleasure to have our beekeeping friends come to see us. We can also be reached by telephone on the Washington Exchange (Cleveland 998). E. F Phillips.
In Charge, Bee Culture Investigations.

MISCELLANEOUS NEWS ITEMS

The Iowa Meeting.—The third annual convention of the Iowa Beekeeper's Association will be held at the Agricultural College at Ames, Iowa, Nov. 17, 18 and 19, 1914. In connection with Short Course in Apiculture and Fine Products' Show, there will be a cash premium offered.

The Domestic Science Department of the college will entertain the ladies present on Wednesday of the convention.

The following program will be given:

PROGRAM.

TUESDAY, NOV. 17—10:00 A.M.

Welcome and Response.

Address of President—Frank C. Pellett, of Atlantic.

Report of Secretary—S. W. Snyder, of Center Point.

Report of Treasurer—C. H. True, of Edgewood.

Appointment of Committees.

1:30 P M.—Short Course Demonstrations in charge of C. E. Bartholomew, Professor of Apiculture, Iowa College of Agriculture.

7:30 P M —"History of Beekeeping"—C. P. Dadant, Editor American Bee Journal.

"Honey Flora of Iowa and Nectar Secretion"—Dr. L. H. Pammel, of Ames.

"Beekeeping in the Inter-Mountain Region" (illustrated)—Wesley Foster, Boulder, Colo.

WEDNESDAY, NOV. 18—9:00 A M.

"Fifty Years of Beekeeping in Iowa"—E. Kretchmer, of Council Bluffs

"Temperature and Moisture of the Hive in Winter"—Dr. E. F. Phillips, Washington, D. C.

"Wintering Bees in Iowa"—W. S. Pangburn, Center Junction.

"Experience with European Foulbrood"—J. I Wilisie, Arlington.

Discussion led by L. W. Elmore, Fairfield

"Experience with American Foulbrood"—D. E. Lhommedieu, of Colo

Discussion led by J. W. Stine, of Stockport.

1:30 P M.—Short Course Demonstrations.

7:30 P M. — "Individual and Cooperative Methods of Marketing Honey"—Wesley Foster, of Boulder, Colo.

Discussion led by J. P. Doll, of Minneapolis, Minn.

"Modern Short Cuts in Beekeeping"—N. E. France, of Platteville, Wis.

Subject to be Announced—Dr. L. D. Leonard of Minneapolis, Minn.

Moving pictures of the honey bee.

THURSDAY, NOV. 19—9:00 A.M.

"Wild Bees of Iowa in their Relation to Plant Pollenation"—L. A. Kenoyer, Toledo, Ohio.

"What the Agricultural College Can Do for the Beekeeper"—Prof. Francis Jager University of Minnesota

Report of Committees.

Election of Officers.

1:30 P. M.—Short Course Demonstrations.

Every beekeeper is urged to bring some samples of his product, for exhibition. No premium list can be offered in advance, but the committee on awards will make such a disposition of the funds available as seems equitable. A small cash fund is available this year, and we hope for such a creditable exhibit as will enable the association to arrange a liberal premium list in connection with next year's convention.

A large display of supplies of standard makes will be on exhibition as well as many new specialties, and beekeepers will have an opportunity to see for themselves what value there is in the new offerings.

It is expected that prominent queen-breeders will also exhibit.

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The Rockford Field Meet.—Between two rainy days, the Rockford meeting of beekeepers was held in delightful weather and in a delightful spot, Black Hawk Park, a mile out of the city. Some 40 beekeepers were present, most of them from the vicinity, but a few from away. Dr. Miller was there, as lively as ever, in spite of his 83 years.

Visiting only was indulged in until after the basket lunch. Then samples of both kinds of foulbrood were exhibited by Inspector Kildow and his deputy, Mr. Lee. A discussion followed, during which it was made evident that when European foulbrood is taken early and is treated by the caging of the queen, it takes but a short time to cure it. The bees clean it out. It is altogether another question with American foulbrood for which there is no other positive cure than removing all the combs and the honey. It is often called the "starvation cure," because the bees are compelled to consume all their stores before the cure is complete.

Dr. Miller gave us at length his summer's experience with European foulbrood. It may be summed into this short paragraph which appeared in Gleanings in Bee Culture:

"In June, I found five cases of European foulbrood. In one case the queen was caged 10 days, in another 8 days, and 6 days in each of the others The treatment was effectual, and I have seen no European foulbrood since."

The advisability of having summer field meets in Illinois next year as they have had in Iowa was discussed, and it was unanimously decided to support this action. A committee of three, consisting of Geo. A. Woolsey, C. M. Hoover and Arthur Lee, all of Rockford, was appointed to prepare another such meeting in Rockford next summer. The State association should organize a number of similar meetings.

Not only are these field meets pleasant, but they are useful in permitting the beekeepers to unite to fight diseases as well as to dispose of their crops.

As Marengo is only 26 miles from Rockford, I accompanied Dr. Miller to his home, where I spent the following day in delightful conversation with himself and ladies. Visiting the bees was out of the question, for it rained in a very disagreeable manner all day. But I had a chance to view the pile of filled sections, which indicate that the Doctor's bees have managed to find honey while ours were starving. With us this has been the poorest season of the 51 which I have seen.

I said at the beginning of this article that Dr. Miller is as lively as ever. He gave me an exhibition of what he could do in the way of agility. Miss Wilson had met us at the station with a horse and buggy. When we reached the house, I jumped out to shake hands with Mrs. Miller. Then I accompanied the Doctor to the barn. He rode while I walked by the horse. It was after 7 p.m., and very dark. Just as we reached the barn, I turned to say something to the Doctor and saw no one, but heard him chuckling behind me. He had jumped out, in the dark, while the horse was walking, to show me how well trained his horse was and how exactly he would stop at the proper spot for unhitching. A boy of 13 would have deserved a scolding for this rash act, but what can you say to a boy of 83?

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Ontario Beekeepers' Association Annual Convention.—The annual convention of the Ontario Beekeepers' Association will be held in York County Council Chambers, 57 Adelaide Street East, Toronto, Wednesday to Friday, Nov. 11, 12 and 13, 1914.

All beekeepers in Ontario and those from other provinces who can make it convenient are cordially invited to attend The Executive also extends a cordial invitation to beekeepers of adjoining States of the Union to be present at this annual gathering.

It will be seen by the program that

there are not as many set subjects this year as usual. We have always found that to give time for discussions, our programs have been too full, and important questions in the question boxes have had to be left over to be answered in the Bee Journal. The effort this year is to give more time than usual to the question boxes, which form such an important part of the program of any beekeepers' convention.

The following is the program:

PROGRAM.

TUESDAY EVENING, NOV. 10—7:30 P.M.

Meeting of Officers and Directors.

WEDNESDAY MORNING, NOV. 11—9:30 A.M.

Minutes—Morley Pettit, Secretary-Treasurer, Guelph, Ont.

President's Address—J. L. Byer, Mt. Joy, Ont.

1st Vice-President's Reply—F. W. Krouse, Guelph, Ont.

2d Vice-President's Reply—Jas. Armstrong, Cheapside, Ont.

Experiences of the Season of 1914—O. L. Hershiser, Kenmore, N. Y.

Discussion—John A. Lunn, Fingal, Ont.

WEDNESDAY AFTERNOON—2:00 P.M.

Specializing in Beekeeping, Its Advantages and Disadvantages—W. A. Chrysler, Chatham, Ont.

Discussion—F. W. Krouse, Guelph, Ont.

Report of Apiary Inspection for the Season—Morley Pettit, Guelph, Ont.

Question Box—John A. McKinnon, St Eugene, Ont.

THURSDAY MORNING, NOV. 12—9:30 A.M.

Putting Up a Honey Exhibit—H. G. Sibbald, Toronto, Ont.

Question Box—J. F. Dunn, Ridgeway, Ont.

THURSDAY AFTERNOON—2 P.M.

Address—W. Bert Roadhouse, Deputy Minister of Agriculture, Toronto, Ont.

Election of officers.

Reports—Directors, Treasurer, Honey Crop Committee, Representatives to Exhibitions.

FRIDAY MORNING, NOV. 13—9:30 A.M.

Sweet Clover, Its Culture and Uses—Wm. Linton, Aurora, Ont.

Good Combs and How to Obtain Them—Geo. F. Kingsmill, B. S. A., Assistant Apiarist, Central Experimental Farm, Ottawa.

Discussion—J. D. Evans, Islington, Ont.

Question Box—Wm. Couse, Streetsville, Ont.

FRIDAY AFTERNOON—2:00 P.M.

Simple Method of Rearing and Introducing Queens—F. W. L. Sladen, Apiarist, Central Experimental Farm, Ottawa.

Unfinished Business.

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Akron, N. Y., Meeting.—Beekeepers take notice! There will be a meeting held at Akron, N. Y., Tuesday, Dec. 15, 1914, at the American Hotel, commencing at 10:30 a.m. Several prominent beekeepers will be there to speak and to help form a branch of the National Beekeepers' Association. Akron is centrally located in western New York, and has good accommodations.

Mr. Chas. Humphrey, proprietor of the American Hotel, gives the hall to the beekeepers for the day, and also special rates to all who attend the meeting. SECRETARY.

◆

Illinois State Meeting.—The 24th annual meeting of the Illinois State Beekeepers' Association will be held at the State House in Springfield on Thursday and Friday, Nov. 19 and 20.

Mr. N. E. France, of Wisconsin, will be with us. His subject will be "Short Cuts." Prof. J. G. Mosier, of the University of Illinois, will speak on the subject of "Sweet Clover." Mr. C. P. Dadant, of Hamilton, Ill., and Dr. E. F. Phillips, of Washington, D. C. Subject, "Temperature and Moisture of the Hive in Winter." Come prepared to help make it a good meeting.

JAS. A. STONE, *Sec.*

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Bees in War.—"We read in a daily paper the other day that a handful of Belgians who had barricaded themselves on a bee-farm were attacked by a whole regiment of German infantry. The defenders allowed the Germans to approach within a few yards of the barricades and then hurled the beehives at them. The maddened insects proved themselves valuable allies, for in less than a quarter of an hour they had driven back the Germans, who fled panic stricken.

"That this is not the first time bees have been employed in war, the following cutting from the Cheltenham Chronicle shows; while all who have read ancient history will be aware how important honey and wax were in those days, by the fact that a certain amount of these commodities were almost invariably exacted by the victors as tribute from the conquered provinces.

"Now that our thoughts are occupied with the great European war, it may be interesting to notice the part the bees played in the battles of bygone ages. The following historical reminiscences are of special interest to beekeepers at the present time, and serve to show what effective 'artillery' bees proved in those far-off times:

"The idea seems to have originated in our island, when somewhere about 908 A. D., a host of Danes and Norwegians coming from Ireland laid siege to Chester. Under their leader the Danes set up hurdles beneath the city walls, and thus protected began to undermine the fortifications.

"When the English hurled down rocks the invaders strengthened their hurdles with massive posts. The English retaliated by pouring down boiling mead (honey wine) and water, and when the attackers in reply covered their hurdles with hides the English as a last resort gathered all the beehives in the city and flung them upon their foes. This plan was successful. The Danes were stung so frightfully on the legs, hands, and head that in despair they abandoned the siege.

"The next use of beehives in mediæval warfare occurs some 30 years later, in the days when Otto the Great was laying the foundation of the German Empire. About 940 A.D., Ghislbert, Duke of Lorraine, revolted against King Otto, who was powerless to crush him until assisted by one of the Duke's own followers — Immo the Crafty. When attacked Immo is reported to have collected a large number of hives and flung them out against the Duke's horsemen. As the bees poured from the hives, stinging the horses into such madness that the riders could not control them, Immo ordered his men to protect themselves and make a sally.' This stratagem was as successful in Germany as it proved in England, and it resulted in the complete route of the enemy.

"A remarkable English MSS. preserved at Oxford, actually pictures the military engines used for slinging beehives. And when Acre was being besieged, the Christians did but little good until the Bishop of Puy (in Germany) caused all the beehives—of his own Low German home at Namur and its neighborhood—to be collected and sent to the 'front,' as well as the wasps and bees that at the brewing season were wont to swarm into the vessels in which the sweet savored beer of the Middle Ages was brewed. 'All around us,' urged the Bishop, 'there is an abundance of beehives. Let us hurl them from our engines over the city walls. So shall we keep the Saracens off while we undermine their fortress.' Twenty-five mangonels then commenced slinging their hives at the same moment. 'The bees,' we are told, 'went swarming into the enemies' ears, stinging them on the eyes, and torturing them until they fled. The Christians broke through the walls, and in this manner was taken and conquered the noble city of Acre. Thus by bees was it taken and subdued.'"—*British Bee Journal*, Sept. 24, 1914.

We had the curiosity of hunting up additional information on the above subject, which is timely. We found the following accounts in "L'Abeille

PHOTO. BY ETHEL KILDOW

THE JOLLY CROWD AT THE ROCKFORD FIELD MEET

A Travers Les Ages," by a Belgian apiarist, Jules De Soignies, 1896:

Agmen, in Latin, means both an army on its way and a swarm of bees. The facts quoted below justify this assimilation.

According to Appian, the Themiscyrans, besieged by Lucullus, turned upon the enemy not only bears and other ferocious beasts, but also swarms of bees.

During the siege of Massa, the besieged having thrown their hives of bees in the breaches, the crusaders were assailed by this new kind of enemies which annoyed them very much.

Amurat the First, Sultan of Turkey (XIV century), experienced a similar annoyance. While besieging the city of Alba, Hungary, he found the passage defended by hives of bees placed upon the ruins. The Janissaries, the bravest militia of the Ottoman empire, refused to clear the obstacle.

It is reported that in 1498, a band of knaves took possession of Avesnes (northern France), and penetrated into the church where the inhabitants were attending public worship.

But all at once they stopped and fled in disorder. A painting was made of this event, representing the Holy Virgin driving away the enemy with the help of a swarm of bees. Hence, came the hive of bees on the coat of arms of Avesnes. It was also at that time that the name "Avesnes flies" was given to depict the quick, flighty, stinging spirit of the ladies of this little northern city.

We read in Osorio, a Portuguese writer of the XVI century, that in 1513, the inhabitants, reduced to extremity, threw over their walls hives of bees and succeeded in driving away Barriga, general of the army of King Emmanuel.

Montaigne wrote that while the Portuguese were besieging the city of Tamly, in the territory of Xiatine, the inhabitants carried hives of bees, of which they had a wealth, and drove the bees so rudely against the enemy that they abandoned the enterprise.

In 1758, in the war of Hanover, a picket of French cavalry was located in an orchard, near hives of bees. One of the horses overturned several of them. The bees assailed the men; several horses perished; some of whom, blinded, struck their heads against the walls and the trees.

In the beginning of the XVIII century, a small corsair, with a crew of 40 to 50 men, having on board a few colonies in earthen hives, purposely taken along, boarded a Turkish galley which had been pursuing it and which had a crew of some 500 men. At the time of the collision, the corsair threw the hives from the top of its mast on board of the galley where they broke to pieces. The bees scattered in all directions. The Turks were so ill-used by them that they thought only of sheltering themselves. But the men of the corsair who had provided themselves with gloves and masks, assailed them with sabers and took the galley almost without resistance.

General Moltke, in his history of the campaign of 1866, says that at the battle of Sadowa, near the village of Nedelist, when the battle was at its highest pitch, a shell burst among some beehives. The bees, indignant at this intrusion, in a fight in which they were not concerned, charged like so much cavalry upon his men who had great trouble to defend themselves, for it is easier to parry a saber stroke or even to pass among the bullets than to avoid the attacks of angry bees who get their strength from their unity.

A last quotation will be made from the Journal of Montmedy, during the war of 1870: The battle of Beaumont began by a surprise due to the carelessness of Gen. De Failly. Near the village was an apiary containing some 60 skeps, ranged in a row and covered, as sometimes is the custom, with old hats, caps, and worn-out clothing. Whether the Prussians mistook them for "francs-tireurs" in the dark, or whether they wanted to imitate the bears in their desire for combs of honey, the fact is that they attacked the hives with sabers and guns. The bees, of unenduring disposition, astonished at this violation of their homes, and true French bees as they were, chastised the assailants. Covered with numberless stings the Prussians were compelled to retire. Four of the invaders were stung to death.

C. P. D.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Bees Making their Home in a Cider Barrel

A fine swarm settled near my friend's home. Mr. and Mrs. H. proudly hived them in a hive. An old cider barrel lay near the hive, and much to their chagrin, when next they looked at their bees, they had changed quarters and were nicely located in the barrel, using the bunghole as their entrance. Of course, they will kill them with sulphur this fall, as they do not understand the art of transferring, and both of them are afraid of a bee.

IMA.

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Wonderful Tales

Wonderful tales are told nowadays about extraordinary things women can do—on paper. A friend has sent in a clipping which, among other things, contains this paragraph:

"A woman in Iowa took a swampy part of her husband's land and raised frogs which she sold in the city markets. The husband of another woman in the same State trapped a pair of wild geese. There was a tract of hilly rock land with a stream on it on the place, which hadn't been considered good for anything. She clipped the wings of her pair of wild geese and put them on it. Now she sells geese from $7.50 to $15 a pair. A woman in Marengo, Ill., started with bees and is now rich."

Why not make a combination of the foregoing? The stream and the swamp might be found on the same place; the surplus frogs could be fed to the geese; the woman's extra time might be given to the care of bees; and then while selling geese at $15 a pair she might sell a few bees at $5 a pair. But that rich woman at Marengo has succeeded in keeping her riches a very great secret in her immediate neighborhood.

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Varnish Factory Affect Bees?

Though a novice in the business of of beekeeping, I have been giving the matter some consideration, with the idea of starting in a small way.

The property where I would propose keeping bees is adjacent to a varnish factory, and at times there is quite a strong odor. I wish to know whether this would affect the bees, and whether

Apiary of Mr. and Mrs. Robert Peschko at Danbury, Conn.
This apiary averaged 40 pounds of comb honey per colony the past season.

t would be so serious as to make it mpossible to keep them in the place I have mentioned?

Ontario. (Miss) H. P. Carew.

There is no likelihood that the odor from the varnish factory would affect the bees unpleasantly. On the contrary bees seem to like it from the fact that they are attracted to a varnished surface. The only unpleasant possibility is that if varnished surfaces were too common a few bees might light upon them and have their feet entangled. But varnished surfaces are not exposed at varnish factories, and it is not likely that there would be any chance for the bees to get into the varnish itself.

Report

I secured 72 pounds of extracted honey this season from 15 colonies, spring count, and 19 fall count. Last year I took off supers with 40 to 48 pounds, and had over 100 pounds from 3 colonies, besides leaving the supers half full and some nearly full for winter stores. This year we had a severe frost on June 6 that killed the alfalfa buds, so that flow was lost, and we have had no rain since June 26. The first swarm came out April 30 much to my surprise. After it was hived it disappeared. I had only two patent hives on hand in the swarming season, and had to put two swarms in box hives again; but I transferred all of them and they are now in 8-frame dovetailed hives. I had good luck in transferring, only one got away. I may have to unite one or two colonies, as one lost their queen and the other I could not locate the queen. It probably may be queenless, too. I would like to buy at least one queen, as there are no more drones, and the queens have ceased to lay on account of the poor season. If there were drones I could rear some queens, but if the bees were to rear one now she would be a virgin until spring.

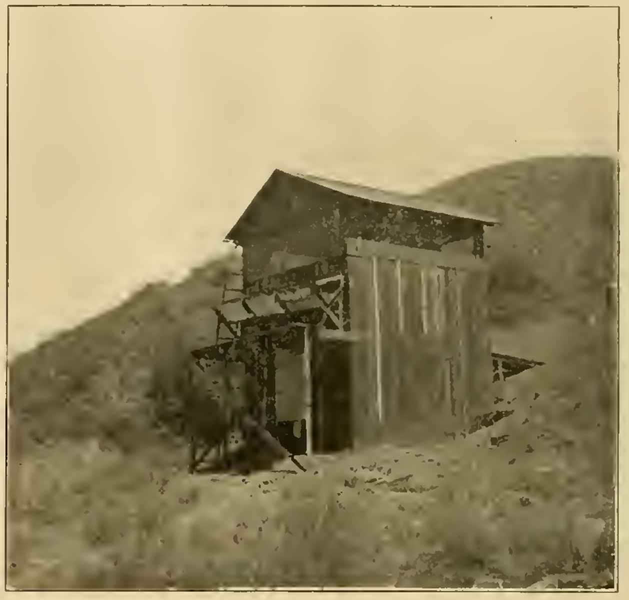
I want to say something in regard to the American Bee Journal. I received my September issue yesterday. I just enjoy seeing it appear. I only wish I could be in the ring, attend the meetings, and shake hands with the lady beekeepers. I wonder if there is one among them from my old country home in Mittelfranken, Bavaria. My grandfather kept bees in straw skeps. All I can remember that he did was to put syrup on flat plates and put grass on top so the bees could not drown.

As to the color of clothing, I seldom wear black stockings, for if I do the bees will surely make a pincushion of me. (Mrs.) Margarethe Green.

Idaho.

April 30 seems pretty early for your first swarm. At Marengo we are about 150 miles farther south than you, yet we think it pretty early business to have a swarm come out as early as the last of May. Yet, of course, climate is not entirely dependent upon latitude.

You do not think you could get virgins mated as late as the first week in September for lack of drones. Yet in an apiary the size of yours it would be strange if all the drones should be killed off so early as that. Even if a thorough search on your part should fail to discover any, it is still possible that a few might be present. While some say they can keep virgins over winter and have them mated in spring, it is not well to depend upon it.



Mr. Pleasants' Two-Story Extracting House

California Bee-Keeping

Conducted by J. E. Pleasants, Orange, Calif.

An Extracting House

I enclose a few snapshots of apiaries showing where we keep some of ours. The extracting house is a new building modeled after the one I built on the Mojeska ranch when I owned it. This new building does not show as well as the old one would have done, but unfortunately I did not get a picture before the old building was taken down. The apiary had to be moved. The house is two-story. The extracting room is above, and screened all around. The screen door swings in or out, and opens automatically when the honey cart strikes the center board as you enter with a load.

It is a cool, light room in which to do the uncapping and extracting, and is as nearly bee-proof as possible. There is a track from the door of this room to the edge of the apiary. The ground floor room contains the large tank into which the honey runs from the extractor above, and affords storage room for the cans and cases. The building is 10 by 12 feet, built of cheap lumber and good screening for the extracting room. The sun-extractor is just outside from the uncapping table, which is covered with zinc. One can use the sun-extractor or not as is desired. They have some advantages, and also some disadvantages. The large honey tank in the lower room is set into the south wall, getting the sun. This house costs about $100. It is comfortable and convenient. The workmen have not yet taken away the scaffolding, which mars the picture somewhat.

The Season

The season is over. Very little honey has been sold, and that has been of the darker grades, except a little of the white which is always retailed direct to the consumer.

A word now might be in order in regard to fall work in the apiary, to put things in shape for the winter. This time of the year with the bees is a period of rest rather than activity. The less, therefore, they are disturbed, the better. In the mountain regions there will be little forage until January. The bees will diminish to some extent, on account of the distance traveled in search of stores, occasional high winds, cool weather, etc. The queen regulates her labors also in proportion to the supplies brought in. Every facility should be now afforded the bees in rearing brood, in order to keep up the strength of the colony. The hives should be looked after to see that there are no cracks or crevices to admit cold air. The entrance should be contracted, and everything done to confine the warmth of the hive to the brood-chamber. Supers, when empty, should be removed. Any colonies which become weak or queenless, unless there is a queen to supply the deficiency, should be strengthened by uniting Proper attention given to the needs of the little workers *now* may save many colonies for the spring count.

Apiary of J. E. Pleasants at the Foot of the Mountains

BEE-KEEPING IN DIXIE~

Conducted by J. J Wilder, Cordele, Ga

The Odor of Honey

The odor of honey, while it is being cured, is noticeable about the apiary, and it is a treat to sit there late in the afternoon, when the bees have had a good day in the field, and catch the odor of the new honey as it floats into the air. Sometimes, especially at this time of the year, Oct. 1, when the honey from goldenrod is being cured, it sends out a rank odor which is just a little offensive. But this is never obnoxious like the chinquapin honey, which has a very strong, soapy, sickening odor. This plant grows very extensively in central Florida. Many times I have seen my apiarists, while working in the apiary, get sick from this cause, turn very pale, vomit, and be compelled to cease work for several hours.

◆

Fall Apiary Work

There has been an abundance of rain so far this fall, and the goldenrod is giving a good yield in the southern part of Dixie at this date, Oct. 10. The asters were giving honey when we left the mountains Oct. 1, so the flow must be general. The bees will not need much attention for winter stores except in the case of weak colonies, which should be given a frame of honey and a frame of sealed brood, if the latter can be found among the stronger colonies. This will strengthen the colony, and with a good queen and a little more attention next spring they will go into spring flow strong.

It is still not too late to requeen if it can be done at once. Requeening colonies that need it is too important a matter to be overlooked at this time. In sections where there has been no fall flow and only a light summer flow the bees may be greatly run down, and in some cases short of stores; feeding should be done at once, and at present cheap honey is best, owing to the high price of sugar.

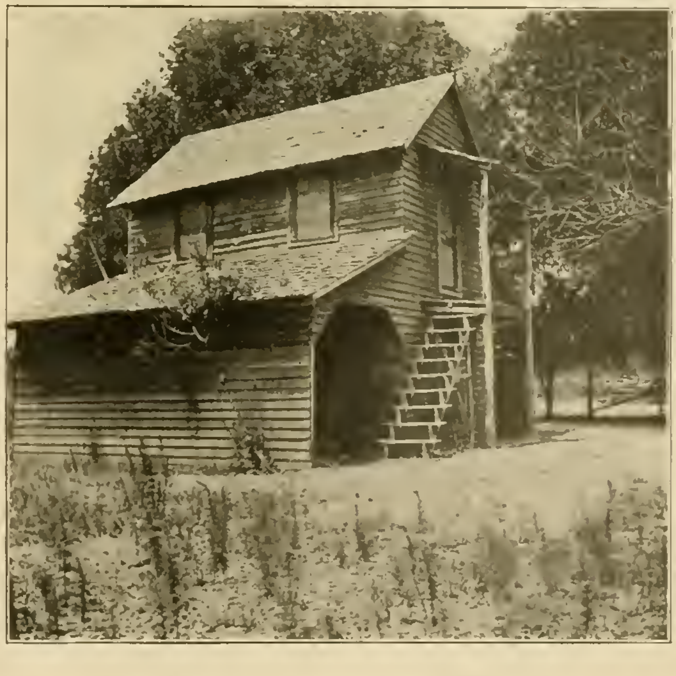
All surplus honey should be removed at once, and comb honey supers taken off and put away until next spring. Maybe it is best to say all supers should be removed except those containing only combs, which will have to be left in the care of the bees.

◆

Our Packing House at Ft. White, Fla.

The cut shows how this house is constructed. The main body consists of two large rooms, 14x24 feet, one above the other, which are the packing rooms. The upper room has only one door in the front and a trap door on the inside, which admits passing from one room to the other without having to go outside. This door opens and shuts by means of a cord and pulley, which are easily worked. The small stairway lands at the front door.

The object of this was to exclude the bees from one or the other rooms at the time of cleaning up, etc. This upper room has six large windows, two on either side and two in the rear end, and a gauze wire door as well as a solid one. In front of this door is a covered platform over which the honey is passed into the room from and to the wagon. This is a very comfortable room to pack honey. The lower room has double solid and gauze wire doors in front under the platform, and on the rear end two large windows and a single door. It is just a matter of choice with us which room we use.



Wilder's Packing House at Fort White, Fla.

We often pack in both at the same time.

In this section we produce two crops of honey a year in the same supers and sections. We run our bees here for comb honey exclusively, but the first flow is very inferior honey, so we try to get as many combs as possible built in sections during this flow, in order to have a great number of combs built for the next flow. Our idea was to do extracting in the upper room, so the honey would run into tanks below. Then the better honey could be packed below for convenience, and loaded in or out at either end of the building. If necessary this room could be used for a workshop. On either side of these rooms are built two sheds 12x24 feet. One is used for vehicles and the other as a workshop.

Cleaning Cappings

Some time ago we gave our method of allowing the bees to clean the wet extracting combs right out in the open by the side of the honey house or the edge of the apiary. They make a nice clean job of it, and there is no waste. Such combs never excite robbing when distributed. What about the cappings? The bees clean them out in the open, too. (See the cut which explains it.) But let me say that we allow each day's cappings to remain over night in the uncapping tank, stirring them up well so they will drain as much as possible during the night.

The first thing next morning they are removed so as to make room for the day's extracting, and dumped into an open slat box. This is set on a stand consisting of two small boxes and a sheet of corrugated galvanized roofing. This has about 2 inches fall to the front, and under it is set a tub well filled with straw. The cappings are well dampened and stirred and left to drain until next morning, when they are dumped into the comb bin, and the previous day's run put in their place. The bees clean up all the cappings and whatever may have drained out from the sprinkling.

Beekeepers' Meetings

Gleanings in Bee Culture for Oct. 1 and the American Bee Journal at different times during the summer dwelt largely on the sociable side of our industry. Groups of beekeepers are shown by clear beautiful cuts. These occasions are called Field Days, and must be very popular from the way they are attended by beekeepers who live in different sections of the country where our industry counts the most.

When it comes to the social feature of our business, I sometimes feel that it is unfortunate to have one's lot cast down here in these backwood regions where all that is shut off. As I looked over the bright faces of those at these great gatherings, I felt lonesome and wished that I could have more of the companionship of those who are engaged in like business with me.

This beautiful feature of our craft is at a very low ebb in most sections of Dixie, and we are beginning to feel the lack of this, for so much could be accomplished if we could only have a few good meetings.

If we could fully realize how much may be accomplished in such social gatherings, it would be no trouble to call a meeting and get the beekeepers out. The trouble lies mostly in getting started. Let us start in time and have one or more meetings next season at the place most suitable for all. If nothing should prevent, I for one would attend, and will you dear reader? If so, drop us a card to this effect, and we will see how much interest there is among the beekeepers in this direction, and later we will make a report.

Cypress Lumber—Hive Making

Since advocating cypress lumber for hive making, a great number of enquiries have come in asking where such lumber can be obtained. In the South almost any large lumber firm handles it. The Hubard Cypress Co., of Waycross, Ga., is a large concern manufacturing this kind of lumber from their own timber, and no doubt it could be obtained of them at very reasonable prices. Their output of one-inch air-dried boards is very great, as their lumber yards where this lumber is cured cover many acres of land.

A number who have written me are going to club with their neighbors and get a carload for hive making. Let me offer a few suggestions about buying lumber and hive making. Boards can be bought dressed on both sides to 13-16 inch, which is just right for general hive making. They run from 2 to 24 inches, and some above this, in width. The widths I get run out about evenly in general hive making. By taking it in this way you can get it at a greatly reduced price. Then, too, I always buy about half and half of No. 1 and No. 2 grades. This also greatly reduces the price. The No. 2 boards of course have some defects in them, but they are easily worked out in the smaller parts of hives, and never result in actual waste. However, there must be some good boards for covers, hive-bodies, etc., and the No. 1 grade will cover this.

There is usually some worm-eaten lumber in the No. 2 grade. This I work into bottom-boards. The small worm holes do not allow bees to escape through them, and soon they are filled from the droppings of the bees or sealed over with propolis. As hive parts consist of many small pieces, there is very little actual waste in a car of lumber.

If one person in every great community of beekeepers would buy a No. 4 Barnes saw without foot power, a 3-horse power gasolene engine with all the hive-making equipments for the saw, a car of lumber could be worked up in this way. It would mean economy in bee-supply expenditure, and this extra money could be put into "more bees." It is not so much the actual price of the factory-made goods as it is the very high freight rates which we have to contend with, and which are very unsatisfactory.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

The Canada Conventions

Glad to note that the Editor of the American Bee Journal expects to be with the Quebec beekeepers on Nov. 12. As our Ontario convention will be held in Toronto a few days after that date, we will expect to have him with us as well. We shall also be glad to welcome as many more as can meet with us from any or all of the States of the Union, in addition to the hosts of friends we hope to meet from Ontario and other Canadian provinces.

Alsike Clover Seed

That the calamitous war now raging over the world may do some special interests a certain amount of temporary good may be true, yet I take the view that war is "hell," and the "benefits" are of a negative quantity and quality. In so far as the beekeepers are concerned, I see no place for them where there is any benefit from the war, even if we dared for a moment to think selfishly when millions are suffering from the awful horrors of war in reality.

For the present at least it looks as though the chief source of our honey in Ontario is about to be curtailed. The main market for alsike clover seed is in the counties on the North Sea, and with conditions as at present the market has ceased to exist. Seedmen will not buy this year's crop at any price, and a few of the farmers are plowing up the alsike that would give them next year's crop of seed. While I think they are making a bad move, nevertheless we are confronted with a fact and not a theory, and with a very slim prospect for next year at best, it seems too bad to see some of the few fields of alsike we have being plowed under.

Why Does the Two to One Mixture Sometimes Granulate?

Since writing that item concerning the proportion of sugar and water in preparing fall feed for bees, I have done some studying as to why friend McKinnon should have trouble with granulation when using the two to one mixture under discussion. In a private letter he tells me he uses the same method and the same brand of sugar that I use, and while he says he has had lots granulate, I have either been too stupid to notice it or else I have never had any granulate in feeding thousands of pounds of this mixture in the last 10 or more years. I have been carefully examining a couple of colonies that were fed heavily, and I can find no cells granulated.

I told friend McKinnon in a private letter, that although money was scarce around this ranch the present season, I would undertake to give him a nickel for each granulated cell he could find. Notwithstanding all I have said on this question, not for a moment do I believe otherwise but that friend McKinnon's syrup did granulate. I would like to know though what was the reason.

Absorbents Over Brood-Chamber

In regard to the discussion on page 332, about absorbents over the brood-chamber for outdoor wintering, regardless of all the pros and cons from a scientific standpoint, the question is pretty well settled here in Ontario. A very few profess to prefer the sealed cover over hives, but by far the greater number of beekeepers who practice outdoor wintering would not think of risking a perfectly tight cover over the top of the frames.

There is no question but that bees will often winter all right when thus prepared, but experience has shown a good many of us that they winter in spite of this handicap rather than because of any benefit from the practice. On the other hand, I have yet to see a single case where a limited amount of upward ventilation did any harm, while on the contrary I have seen hives thus prepared where bees wintered splendidly in exceptionally severe winters, when others with sealed covers perished on all sides of them.

Cooperative Fruit Business

Much has been said in the past as to the benefits that accrue to the beekeepers if they were all organized on a cooperative basis, and while most of this talk as yet is but speculation, there seems to be no question but that the cooperative movement has been a huge success with the fruit men of the western States in particular.

This year the peach crop was almost a total failure here in Ontario; only a comparatively small part of the province grows peaches on a commercial basis. This failure of the crop locally gave an opening to other producing areas, and I have just had the pleasure and novelty of buying a box of Elberta "70's," sent out by the United Fruit Co., of Delta, Colo. To be more explicit in the address of the grower of this particular box of peaches, the stencilling says, "Surface Creek Peaches, Benita Ranch, Eckert, Colo." The box was a triumph in the art of packing for long distances, and every peach was in perfect condition and wrapped in paper. Our local fruit man told me he had sold 400 boxes of Colorado peaches and guaranteed not only every box but *every* peach.

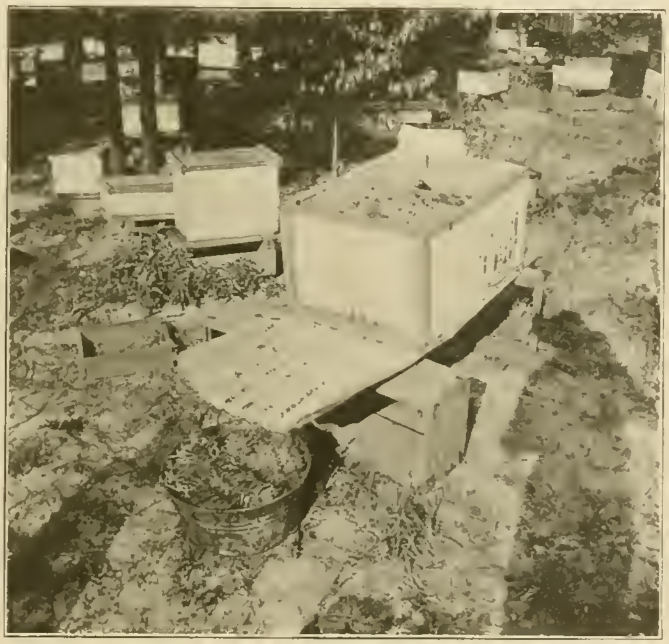
We were unanimous in praising the condition and *looks* of the fruit, but just as unanimous in deciding that they do not nearly equal the Ontario peach for eating qualities either out of the hand or after being canned. If it is of any interest to our Colorado friends who may see this item, I might add that the box cost us $1.25 at our nearest town. In Toronto the same fruit was retailing at $1.10. It might also be interesting to know how much of that total went to the grower, railroads, commission men, etc.

Wintering On Aster Honey

Since sending the last batch of notes for the American Bee Journal we have had a month of beautiful weather, much warmer than usual for the time of year. Bees in York county have been carrying in a little pollen right along, and the apiary 100 miles north has literally jammed each brood-nest with honey from asters and other fall flowers. While most of this honey is sealed, nevertheless we shall be a bit anxious as to results in wintering, as aster honey has had a bad record in northern latitudes where bees go for months without a flight. At least two-thirds of all the honey in the hives in question is first-class, as it was stored early in the season. The trouble is that this late honey will be used first and at a time of the year when the bees are not likely to fly for three or four months after it is consumed.

Some have suggested that we extract a lot of this honey and feed sugar, which we had at the yard in anticipation of feeding before this late flow surprised us. But after October comes in Ontario it is not a nice matter extracting out of the brood-nest, as the bees are hard to get from the combs, and seem to be in a sort of sluggish condition peculiar to the approach of cold weather. Then there is great danger of starting up robbing by giving back sticky combs at this time of the year, not to mention the danger of losing queens when handling bees at this unseasonable time.

Let results be what they may, it is now too late to do anything, and while I would have no fears from solid sealed stores that I was sure were all right, this year we have the unique experience of having an apiary of 250 colonies going into winter quarters literally solid and no feeding being done. As to quality of the stores, no doubt we will be in a better position to speak on this matter next spring than we are now.



WILDER'S METHOD OF "CLEANING" CAPPINGS OF HONEY

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo

Government Aid in Marketing

The Post-office Department has undertaken to bring the producer and consumer closer together in this way. In certain designated cities the farmers with produce to sell, list their names, address and articles they have for sale with the postmaster, who, in turn, distributes this list free of charge among the city dwellers by means of the mail carriers. In this way if you have honey or apples, potatoes or cabbage for sale you can let the people in the cities

APIARY OF GEO. W. RANKIN AT COLORADO SPRINGS
Mr. Rankin has, besides this apiary, the only house apiary in Colorado that I know of.—WESLEY FOSTER.

know of it free of cost. It is hoped that more direct dealing will result.

A new order has been sent out warning the mail clerks to handle parcel post matter more carefully, and making the mail clerks responsible for breakage of parcel post matter. If this order will make it possible and safe for comb-honey shipments to be made by parcel post, we will be the gainers.

Denver is one of the cities designated to furnish the service free to consumers, and the cities will be increased in number to receive this service as rapidly as results are seen to accrue from the new venture.

Delta Co., Colo., Beekeepers Meet

Saturday, Sept. 19, the beekeepers of Delta county met at the Court House at Delta and had a very profitable and enthusiastic meeting, about 25 being present.

Mr. Wesley Foster, Deputy Bee Inspector from the State Entomologist's office, was present and gave a short talk on the European foulbrood situation in Delta county. European foulbrood has been discovered near Paonia, but as yet has not spread to any appreciable extent. If prompt measures are taken it is probable that the spread of this disease may be checked and the disease wiped out in a shor time. Samples of the diseased brood were examined by all those present, so that all could be on the lookout for it.

The poisoning of bees by spray was discussed, and the opinion was general that the clover crops, such as red clover, alfalfa, etc., should be cut before the trees are sprayed or the bees in the vicinity would be killed. Instances were cited where many fruit growers were doing all in their power to aid the beemen in avoiding this new trouble.

Plans were laid for the formation of a permanent county organization to aid in the purchase of supplies and the sale of honey. Geo Lester, of Delta, W. S. Picket, of Cedaredge, Thomas Watson, of Hotchkiss, Chas. Alton, of Paonia, and Frank Drexel, of Crawford, were appointed a committee of organization, and a meeting was called for Oct. 31 at Hotchkiss to perfect the organization.

The price of honey this year was a subject arousing much interest. The prices offered for honey tend to rise, and the opinion was general that it would do no hurt to wait a little before selling, although if a good price is offered it would be well to sell.

Messrs. J. C. Matthews, E. D. Nichols, Geo. Nichols, J. J. Corbut, and Wm. Corbut, all of Montrose county, were present, and were especially pleased at the efforts made to effect a Delta county beekeepers' association to cooperate with the Montrose association.

National Convention in Denver

The National convention is coming to Denver next February. This will give the beemen of the Inter-mountain region an opportunity to be the hosts. Every Rocky Mountain State should have a good strong delegation—the more the better. The Colorado State Beekeepers' Association will do everything in its power to make the meeting a success, and will make what local arrangements are necessary. Suggestions on what we can do to insure a large attendance and a smooth running meeting are welcomed.

That large beekeepers by the score will be present is certain, and money making ideas will be in the air all the time. There will be some diversions for the entertainment of the guests also. If the weather and roads are suitable it may be possible to see some of the country around Denver, including some commercial apiaries, in automobiles.

But come, wherever you are, you will not regret it.

HERBERT WEBB, OF COLORADO CITY, AND HIS ORNAMENTAL APIARY.
Note the rustic hive in the background.

NOTES FROM ABROAD

BY C. P DADANT.

When I gave a hurried account of our travels, in the Bee Journal for October, 1913, or a little over a year ago, I promised our readers to write, when the time came, concerning the kaleidoscopic changes of a journey from the southwest corner of Switzerland to the north plains of Italy. We have now reached that part of our voyage.

One can go from Switzerland to Italy by two rail routes, the Simplon or the St. Gothard. We selected the latter route, although a little longer, because the tunnel is shorter (only 9½ miles), and also because the line took us to Bellinzona without change, from Lucerne. We left Nyon at 10 a m. At 11 we were at Lausanne, still in a French speaking country. In another hour the signs upon the doors, in the

At Cernusco Sul Naviglio.
From right to left, Count Visconti, Dr. Triaca, Miss Valentina Visconti.

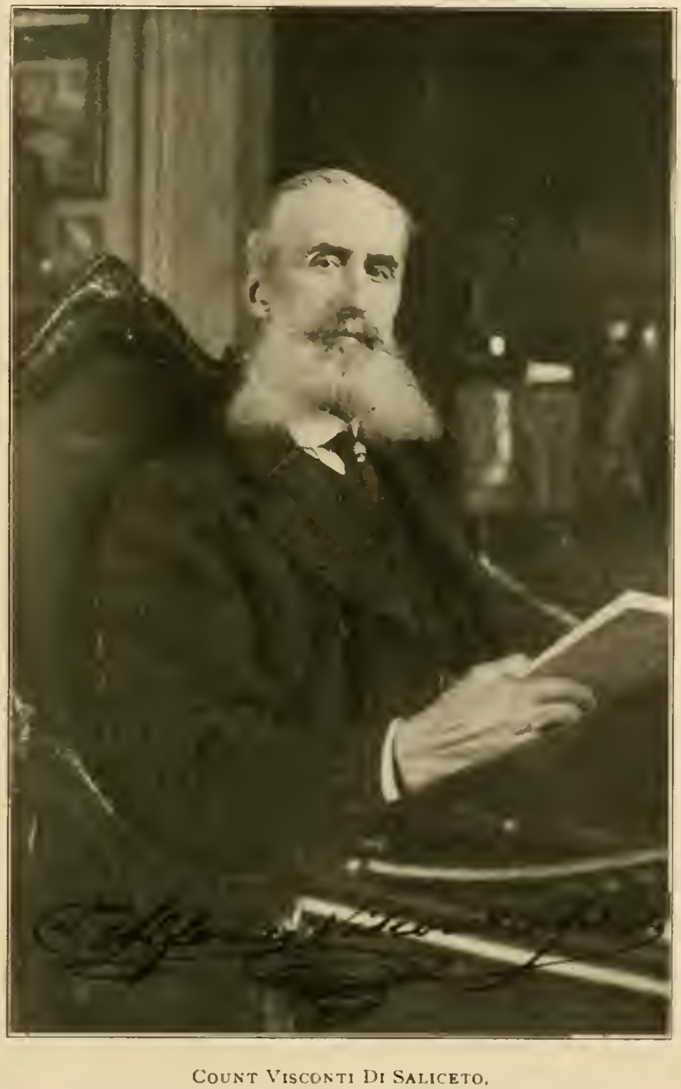
cities along the way, were already changed to German. Berne! There nearly all is German. Lucerne! Still more German. We change trains at 4 p.m. We go due south. The hills get more and more abrupt. The vineyards have long ago disappeared. Now the wheat and oat fields are replaced by pastures and meadows. The slopes are so steep that, to handle the scythe, without slipping, the mower has to wedge his toes into little cavities on the hillside. Women with rakes and forks stir the hay or pull it down the hill. They make hay ricks about large enough for a man to carry at one forkful. A little farther we see men carrying fire wood, in panniers, on their backs, down a steep slope.' We cross tunnel after tunnel, 80 of them, 250 bridges, between Lucerne and Bellinzona. The line enters a narrow gorge; the torrents flow hundreds of feet below the track; the air gets cool and the snow begins to show above us. We stop 8 minutes at Goeschn n, near the mouth of the big tunnel. Every cottage has a monster of a mountain behind it, threatening to fall upon it.

Indeed we see where big avalanches of snow have cut everything down in their path. It is an exciting sight. We buy postals representing half a dozen flashing views, but not more flashing than the sights we have before us. But people live and rear children there, little folks who perhaps don't realize that there is any spot in the entire world more level than this chaos. As we start with two locomotives, we see several automobiles arrive on the road across the torrent. They keep up fairly well for a few minutes, as the road and track are running in a parallel line. But all at once we plunge into the big tunnel and lose sight of them entirely. In a very short time we are out again, but headed north instead of south. The line makes several loops as it ascends into the St. Gothard. At each loop, the train takes a peep in the open, a little higher than before. In each case we see the previous entrance below our feet.

We finally get into the heart of the mountain and spend 15 or 20 minutes under ground. All at once the speed increases. We have passed the high point and are going down hill towards the south side. As we emerge into Italian Switzerland, the view is changed again. The cottages are of white stone, with dark stone roofs. The fences are all made of thin, flat, tall stones about 18 inches wide and 5 or 6 feet long, stuck on end, side by side. Vineyards appear again, but they are trellised on high stakes, joined together with poles, so that the laborer can work under the trellis to cultivate the land. It is very pretty to look under and see the grapes hanging in an acre or so. Then we see corn, for we are quickly getting into a warm country. There is very little corn grown on the north side of the Alps.

The signs in the streets are now all in Italian, though we are still in Switzerland. The villages look old and decrepit. At last, after nine hours of travel, during which we seem to go through three different countries, all Swiss, we land in Bellinzona, an old fortified city, of which we spoke in th issue of our Journal above mentioned. We gave there a picture of the old fortress and an account of our visit to the Biaggi apiary. It is located almost at the foot of an immense bluff, in a very rugged country. Biaggi is very proud of his bees and of the prizes he has won. He showed me certificates received by him at the Swiss Agricultural Exposition of 1895, at the National Exposition of Geneva 1896, at the Bee and Honey Show of Liege in 1896, at the St. Louis Fair of 1904, and at Frankfort-on-the-Main in 1907. He has his own independent views concerning the qualities of Italian bees. He says that in order to secure the best of those qualities, prolificness and endurance, we must take them as they are produced by nature and avoid breeding artificially. In a word, he believes in naturally bred queens, and for that reason he takes the greater part of his stock from natural swarms purchased from country people, in Italian Switzerland.

We stayed with him but an hour or two and hurried to Locarno. We should have liked to spend more time in Tessin. There was another apiarist



Count Visconti Di Saliceto,
President of the Italian Beekeepers' Association

Monument of Barnabas Visconti

whom we wanted to visit, but he was sick and away from his home.

We traveled the length of Lake Maggiore, on a fine steamboat, during a very sunny day, ate our dinner of Italian macaroni in company with Italians who ate it in the Italian fashion, without cutting it, letting it string from the plate to the mouth. Towards evening, after having seen some of the most beautiful islands and scenery in the world, we landed at Stresia, and took the through train for Milan, where we arrived at 7:30 on the evening of Sept. 3.

Milan, aside from its interest as one of the leading Italian cities, had a great attraction for us. It is in Milan that the principal Italian bee journal, "L'Apicoltore," has been published since 1867. I have often mentioned this progressive monthly in the American Bee Journal. My father had met its first editor, Count Visconti Di Saliceto, who was a young man, when he went to Italy, in 1872. They were then fighting for the same cause, the movable-frame hive and the new methods, against old practices in bee-culture, the brimstone pit and the ancient routine. The present editor of "L'Apicoltore," Mr. Vincenzo Asprea, lives in Calabria, at the southern extremity of Italy, perhaps 1000 miles from Milan. We could not meet him, however much we would have liked to do so. But we had written to the National Association at Milan, and Messrs. Visconti and Triaca, the president and vice-president of the association, were expecting us. I spoke in the letter above mentioned of the hearty reception given us by Count Visconti, but have not yet said anything about his friend, Dr. Triaca, one of the kindest and pleasantest men in the world. Not only had they offered to meet us at our arrival, but they had announced our visit in "L'Apicoltore," and had made arrangements to accompany us in several cities where bee-meetings were organized for our benefit.

We could hardly believe that they would carry hospitality to that extent. But the Italians don't do things by halves, and they surely know how to entertain their guests and do them honor. Besides, they are so warm hearted and enthusiastic, that it is a pleasure to be with them. There was nothing to do but let the current carry us.

Among its numerous curiosities, Milan boasts two marvels, the white marble "Duomo" or Cathedral, and the Castle—'Castello di Milano"—which has become a museum. The Duomo looks like a forest, on the inside, so numerous are the marble columns which support its vaulted arches. An entire number of the Bee Journal would not be sufficient to describe it, so we must pass on. But the Castle drew our attention more particularly because we were visiting it with a descendant of the original builder, Galeas II Visconti, who erected it in 1368. The structure was destroyed in 1447, and rebuilt in 1450 by Sforza, who married a daughter of the Viscontis. Thus the arms of the two families are everywhere to be seen in this palace, which also contains the funerary monument of Barnabas Visconti, erected in 1370. It was a novel experience for Americans, when we visited the home and apiary of our kind cicerone, the next day, to see upon the honey recipients the coat of arms of a scion of the dynasty which ruled a part of Italy for some 200 years. (See the picture of his label.) But we must not anticipate. We saw many interesting things during that next day.

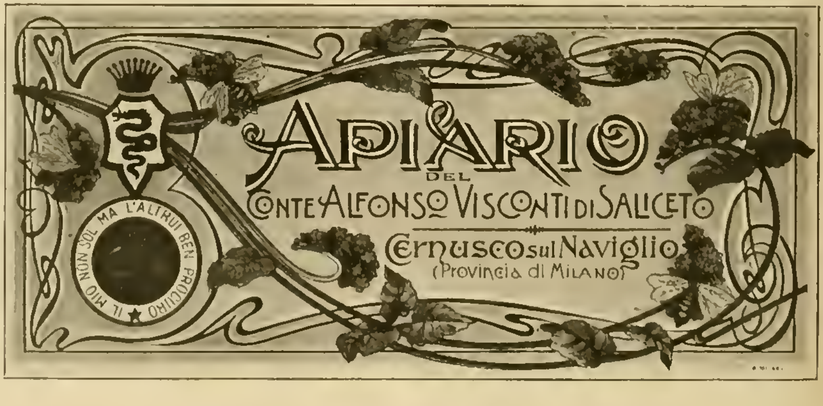
The palace contains a museum of history and archeology. It has lately been restored, for it was badly dilapidated during Austrian rule. They had housed their soldiers and even their horses in it. Is it any wonder that the Italians do not love Austria?

After seeing all this, we went to lunch with our two friends in a restaurant, which was also more like a palace than a hostelry, and ate our meal of Italian dishes under a cupola perhaps 60 feet high.

In the afternoon we visited a beekeeper who keeps a fancy grocery, and who showed me samples of as fine honey as I have ever seen. He insisted on giving me a sample jar. But it was out of the question for us to carry it with us, and Dr. Triaca kindly volunteered to forward it for me to Mr. Caillas, of Paris, the honey analyst already known to our readers. I knew it would please him, as he makes tests of honey of all countries.

This grocer, Bianchi by name, could not speak French like our friends, and I then realized how little Italian I knew even though I can read it readily. Had it not been for the Count, I should have had trouble to comprehend. Several beekeepers came while we were there and became interested and talked so fast that I could not make out anything they said.

Mr. Bianchi appears to be one of the most successful honey retailers in the


APIARIO
DEL
CONTE ALFONSO VISCONTI DI SALICETO
Cernusco sul Naviglio
(Provincia di Milano)
IL MIO NON SOL MA L'ALTRUI BEN PROCURO

Honey Label Used by Visconti—(Half actual size.)

The Villa Visconti, from the Highway.—(Photograph by Count Visconti.)

world, if I noted correctly what he said to me. He handles at retail some 40,000 pounds of honey annually. But his location is excellent, in the heart of that big city. He sells mostly extracted honey, in glass jars of different sizes, and a little honey in combs about 8x12 inches.

The pound sections are practically unknown. The price obtained is about 30 cents per pound for best honey in small jars, jars thrown in. He called my attention to the fact that the State revenue tax on sugar is so large that this commodity costs about 14 cents per pound. But a long established business and his own confidence in the purity of the honey he handles have most to do with his successful sales.

The motto carried on the goods sold there was first devised by Count Visconti, some 45 years ago, for the Italian bee, and was the watchword of "L'Apicoltore" for years: "Il mio non sol ma l'altrui ben procuro." (I do good not to myself alone but to others.) A parody of this was devised by Thos. G. Newman as follows: "Our toil doth sweeten others."

Another beekeeper whom we met in Milan, Piana, of Piana Brothers (not to be confounded with Gaetano Piana, whom we met later), living near Novara, 30 miles west of Milan, is a queen-breeder following the Phillips method of queen-rearing. They are large honey-producers, mainly from locust, gathered in May. The sample he showed me was of the color of olive oil, a little darker than clover honey. Their bees winter on the heather, and they never have winter losses because of the mildness of the winter. This is true of all Italy.

Of course, we had doffed our winter suits and our "top coats," as the English call them, as soon as we passed the Alps, and we had sunshine that felt for all the world like the sunshine of Illinois. But there was no danger of mistaking this part of the world for Illinois, even with our eyes shut, for the sweet sounds of the Italian tongue resounded everywhere, and neither the houses, the streets, the monuments, the gardens, the trees, the fences, nor the crops, looked like anything American.

The streets are as clean in Milan as in Geneva. But some of the methods of cleaning are peculiar. We saw a little boy, with an iron pail and a dust-pan, gathering horse manure on the street for somebody's garden. He pushed it on the pan with his fingers and wiped them on his trousers afterwards. How will that do for local color? And remember, dear readers, that this magazine goes to some of the Italian beekeepers, so we dare not tell any fibs.

CONTRIBUTED ARTICLES~

The Life of a Bee Inspector—Opening Hives

BY F. DUNDAS TODD.

THE readers of bee journals are the *elite* of the occupation, interested in their work or their hobby, as the case may be. They house their bees in well constructed hives and take special pride in having well made movable combs. In about a minute they can whip off the cover of a hive, pick out a frame, run a glance over it to learn its condition, and then just as quickly replace it in the brood-chamber. The men they fraternize with are like-minded, so they naturally assume that all beekeepers are just as methodical and careful in their habits.

Now here are the facts: The average keeper of bees is not a beekeeper at all. Like most of us he tumbled into beekeeping, and he still lies in the hole. Somebody wished a swarm on him, or he saw one clustering on a branch, and obeying the primitive hunting instinct he gathered it in, housing it in the handiest box or nail keg that happened to be around, and it is there to this day. Furthermore, there are about a dozen more like unto it. Once in a while he gets ambitious enough to own frames, and I have seen them with top-bars ranging from half an inch to three inches in width. Then the beeman will wonder why the bees do not have sense enough to keep to the middle of the bar.

Frames without starters, non-spacing frames jumbled to one side of the hive or hanging askew, bars made from lathing, frames from the same material and standing on the bottom-board; these things are more the rule than the exception. Bees are to be found in soap boxes, fruit boxes—these with quarter inch seams on the roof open to the rains of heaven; nail kegs less than a foot high, with a couple of half inch holes to do duty as entrance, tea chests, and—but why prolong the list?

By way of variety, I will ask the Editor to reproduce a photograph of one of the most original apiaries I have come across. It belongs to a Chinese storekeeper in one of our coal mining districts, and is located under the ceiling of the front porch of his store. I was introduced to this child of the orient as, "Heap big government man; heap savey bees," and he was at once as childlike and bland as any Chinaman famed in rhyme. We got along famously. For inspection purposes he loosened the wire fastenings of the box, and with a pole pushed up the lid. Questioned as to whether he got any honey he said, "Oh, yes." I asked why one colony had died?" He said, "Oh, catch him honey with a knife, bees not likee; fly away." This with a sweeping motion of the hands that pictured a general flight into parts unknown. I have three other Chinese beekeepers on my list, and all I can say about them is that they are just as successful as the average white man, and in saying this I am not throwing bouquets at anybody.

The very first apiary I tackled nearly did for me, but in the long run I was glad I met it first, for in its two dozen colonies I met about every possible combination of pure cussedness that it is possible for ingenious, or careless, beekeeper to invent. When I was through with the job I felt I could open anything with the possible exception of a burglar proof safe. Old Archimedes 2000 years ago proudly announced to the world that given a lever long enough and a suitable fulcrum he would undertake to move the earth. Good old Archie, you were all right. I often think of you as I face a box of tricks, looking for the point of attack, and the fulcrum. My good right hand holds a first-class lever of the first order in the shape of a Root hive tool. It is the only weapon I carry, but occasionally assisted by a long-bladed knife I have yet to meet the hive whose contents I cannot explore, and I certainly have met some that were fearfully and wonderfully made.

The first hive I tackled was five stories high; this was about the middle of May. It started off with a regular brood-chamber; then a section super filled with sections. Above the super was a soap box without frames, then came a super without sections, and last of all a super with sections. The cover was of the gable-roof variety with 2-inch telescope sides. Between every body were layers of oilcloth, sometimes two or three. Under the cover was a grain sack. The bees had worked passages through them all, and plastered the remaining fragments with propolis. The hive was solid with honey and brood from top to bottom.

Being in absolute ignorance of the nature of such a contraption, I had to feel my way along. Nowadays I would be in such a conglomeration in less than a minute, but at that time I did not appreciate the tearing power of my hive tool when properly applied to a telescope cover sealed down with solid honey. So I requisitioned a hatchet, a a big knife, and attacked the structure. Once I got inside and viewed the prospect I ordered utensils. After two hours steady work I had put the hive into workable shape, and found I had replevened one super full of fine ripened section honey, two big dishpanfuls of chunk honey, and in addition had the farmers' children out of reach of danger, held by the attraction of a pailful of scraps, with which they freely smeared their faces and hair as they excitedly tucked into their little stomachs the first honey that had ever been produced in that apiary in the 20 years of its existence.

I have a few photographs of this particular hive, and the various stages of its demolition, but I dare not use them. The beekeeper has now an apiary so attractive that it has many visitors yearly, but he threatens to kill me on sight if I ever exhibit its past condition. The past is past, and he wants to forget it. His example is having a fine influence in the district, and the 78 boxes that stood for beekeeping in that region a couple of years ago are now nearly all replaced by modern hives. For many years not a pound of honey had been produced there, but in one season it arose to nearly 500 pounds, so you see the beekeepers are on their way.

We do not like box hives in British Columbia; in fact, our Foulbrood Act forbids their use, so the inspectors are bound in duty to get rid of them. We find we do not need to use the club; all we have to do is to get some one in a district to secure a crop of honey by his own hands, and the spirit of rivalry comes into play. No man cares to have to admit to his neighbors that he is a second-rater, so he proceeds to do as well as he can.

A very amusing example came under my notice this summer. A year ago in a district with six beekeepers owning 56 colonies, I found not one pound of honey had been produced for years. The largest apiary had 36 colonies in dreadful condition, and I urged the owner to shape up things a little bit. He answered yes in such a half-hearted way that I knew he would not do anything until he got stung by the spirit of rivalry. He was the big man of his locality, not doing very well, but nobody was doing any better. I found a beginner ready to be taught, so I gave him a day, got him into shape, and drew up a calendar for his region.

Towards the end of this season's honey flow I happend to see the supposed big man on a suburban car, and at once he started to tell me all that he intended to do next year. I had to let him finish, then I wanted to know about the other men in his district. Quite meekly he told me the beginner had gotten 500 pounds from six hives, and that most of the others had something. He was the only one without a crop, and his dignity had received a bad knock. I have earmarked him for a day next year. I will probably go 50 miles just to get him on the tracks at the moment he is anxious to do something.

HIVE TINKERING.

Now suppose I tell the kind of work I will have to do to show this man how to get his hives in good shape. His bees are housed in a variety of ways. He has several first-class modern hives with really good combs, but he has just as many in which they are built diagonally across the frames. Then there are several Gallup hives with non-spacing frames, many of which have jumbled any old way, with the combs built on similar lines. Also he has a few soap boxes. He purposes investing in modern 10-frame hives and transferring from the odd lots. It is my affair to start him right.

Early in the season I will write him to let me know when his supplies have arrived, and as soon as I can I will be with him. I will probably start by making jigs for wiring frames and fastening sheets of foundation, and show him how to use them.

The next move will be on the standard hives. Those with good frames will be gone through, the presence of unusual quantities of drone-comb in the middle of the brood-nest will be pointed out, and attention drawn to the very evident fact that it is hindering the queen in her laying in the early part of the season, for instead of the brood-nest being in the form of a ball, the queen has been laying backwards and forwards along the combs, trying to dodge the drone-cells, and too often has been brought to a standstill in working in a certain direction. Incidentally let me here remark it is sometimes astonishing how much drone-comb one can find in some hives. In one instance I found no less than seven drone-combs out of a total of eight. The colony died the first winter. I diagnosed the case as a bad attack of parthenogenesis. (Please, Mr. Editor, put me down as the discoverer of this affliction.) Wherever possible I get rid at once of all combs in which drone-cells predominate, but if heavy with stores I work them to the side of the hive and urge that they be removed as soon as they are empty.

Next I tackle the regular hives with cross-built combs. I lift the first off the stand, placing an empty body in its place, and alongside of me I have a flat cover or board handy. Ready to begin operations, I force a long bladed knife between the first and second combs, cutting right along, then force out the first comb and place it in the empty hive. Next I cut between the second and third, pry out the second comb, shake the bees from it into the hive on the stand, then lay it flat on the board. I am going to true up the combs so as to make them removable. As we look on the comb we see that it is made up of several parts that overlap each other. To get rid of the overlaps I cut through both with the knife, slashing from top to bottom bar, throw the trimmings into a scrap-box, squeeze the raw edges into line, then slip the frame into the new hive. And so on right through the rest of the combs. In 48 hours the bees will probably have made all repairs, and the beekeeper has now a hive with removable frames. Once I get into my gait I can fix up four or five such hives in an hour.

Even in going through fairly good hives I get a chance to demonstrate how to true up twisted combs. You simply run a knife or the edge of the hive tool along the edge of the bar where the connection is faulty, then push the comb into place. In a very bad case, such as a comb built entirely on the side of the frame, it is better to make two stunts of the job. On the first day cut the connection between top-bar and comb, and push the latter into place. At next visit straighten out the sides. When two combs are attached to the same bar, dispose of one entirely and remedy the other. A bee inspector has a grand chance to learn the tinkering trade if nothing else.

A Chinese Apiary in British Columbia.
[To view this properly hold it about one foot above the level of the eyes.]

The hives he intends to discard I will leave alone. During May, in his locality, there is a fine flow of nectar from the soft and vine maples. So plentiful is the secretion in most seasons I am convinced a really good bee-man could harvest about 40 or 50 pounds surplus from these sources. As a matter of fact I occasionally stumble across a strong colony with that amount of freshly-gathered honey stored away by the beginning of June, so I am not guessing any, and a very dainty honey it is.

Well, May is when he can get new combs drawn out, so I will show him how to fit his new hives, all frames filled with full sheets of foundation, on top of the ones he is going to discard, and advise him to wait until the end of August or later, when he will probably find the bees have settled for the winter in the upper story, and he can take the old hive away.

The soap boxes will be turned upside down, a new hive fitted to them, and I will expect them to be out of use by the end of the season.

If I happen to be passing his village in the course of my wanderings, I will probably stop over the time between two cars just to see how he is getting along, and above all to keep up his enthusiasm. British Columbia imports over 80 tons of honey annually. We have a plant in existence right now that ought to produce pretty near all that, so it is evidently our business to see that the owners know how to run the bees to advantage.

Victoria, B. C.

Wintering Bees Outside

BY B A MANLEY.

BUILD a tight board fence about 30 inches high, place the summer stands in front of this fence (I prefer to have them face the east) about 4 inches from the fence and 3 inches apart. Fill these stands with dry leaves, place the hives on the stands, leaving on one empty super. Lay two or three corncobs across the brood-frames about one inch apart, to give the bees passageway to all parts of the hive; cover the super with a gunny sack large enough to overlap good, and on this gunny sack fill the super with oat chaff or dry leaves pressed down good, and fold the edges of the gunny and put on the cover; then place a 10-inch board at the top of the brood-chamber to form a shelter over the entrance, and stand on edge an 8-inch board on this, just in front of the supers. Place a 4-inch board on edge in front of the alighting-boards; this forms a space under the 10-inch board for holding straw in front to keep out the storms. Now fill behind, between, and every space with dry leaves packed down good and tight. A light frame work on top will be sufficient to receive the prepared roofing.

When the mercury gets up to about 45 degrees, and the weather looks favorable, I remove the straw in front to give the bees a flight, but always put it back in the evening. I have followed this plan of wintering for more than 25 years, except a few years that I was out of the business, and have been very successful in getting them through the winter. One time I tried them in the cellar and failed.

I now have 80 colonies, and they are in good condition. I use dry leaves for packing, for they are the cleanest thing that I can get, and then mice don't nest in them. The straw used in front should be free of grain so as not to encourage mice.

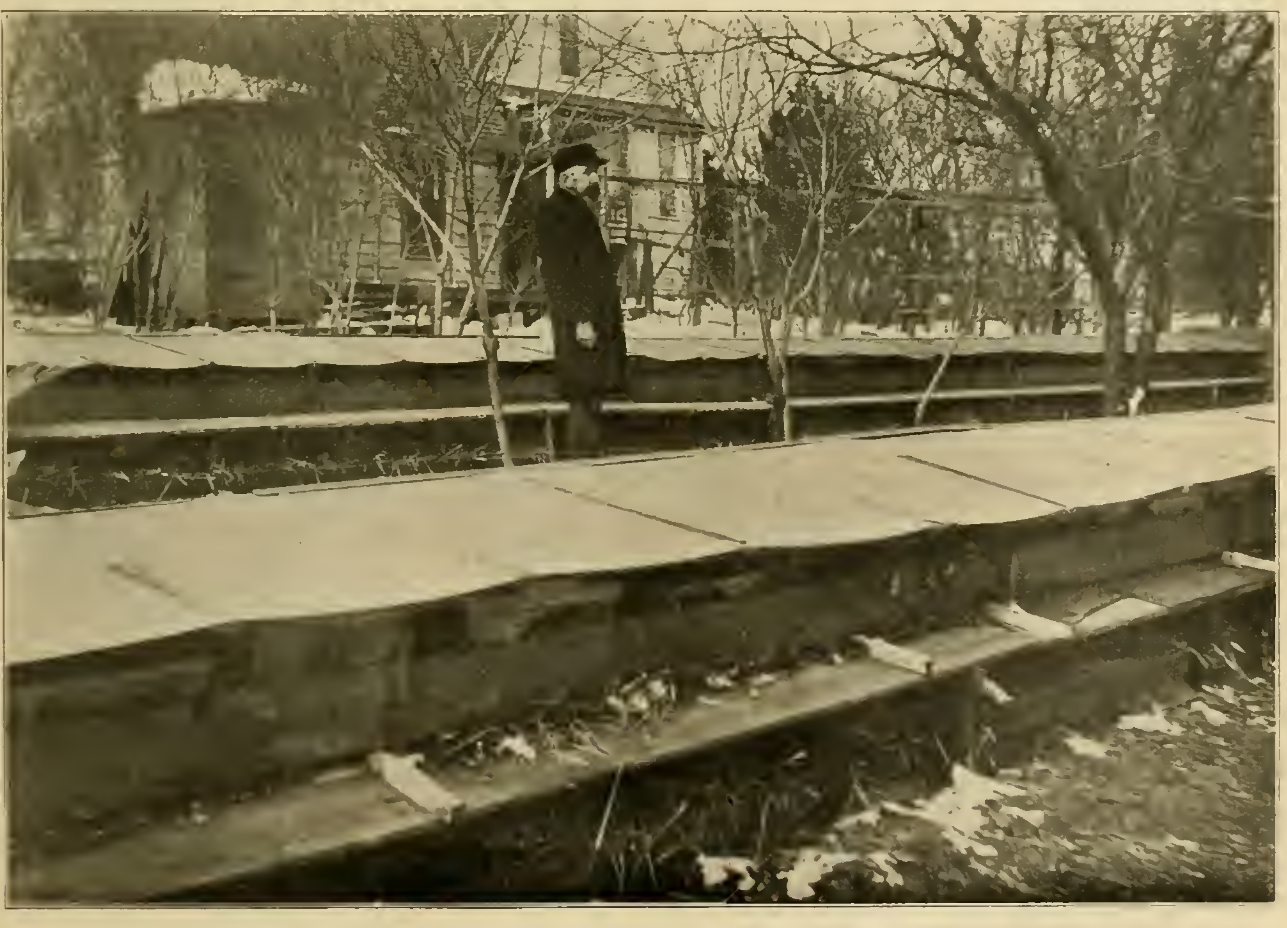
One advantage in this plan is that the bees can be kept in winter quarters through the bad weather in April, which is sometimes quite an item.

Milo, Iowa.

Smoke Method of Introducing Queens

BY ELVIN M. COLE.

WILL you allow an amateur to offer a few suggestions on introducing queens by the smoke method. I doubt if the scent of smoke, or distress as asserted by Mr. Arthur C. Miller, or violent emotion according to J. E. Crane, accounts for the successful introduction and acceptance of queens by this method. It seems more rea-



OUTDOOR WINTERING IN IOWA—B. A. MANLEY IN HIS APIARY IN MILO.

sonable to believe that the queen is accepted because by this method the bees are made to quickly realize their queenlessness.

Let me illustrate how quickly I think this knowledge is spread through the colony:

The first queen I ever introduced was by the cage plan. As the bees were slow to release her, I decided to let her out myself. I removed the cage containing the queen from the hive, with perhaps a dozen bees clinging to her, and in my awkwardness and haste I allowed her to come out while the cage lay on the ground some two feet from the hive. As she came in touch with the few bees clinging to the cage, they sounded their joyful signal, and *instantly* a mass of bees as wide and deep as the entrance came pouring out of that hive, boiling out faster than any swarm ever issued, met the queen and escorted her into the hive. I think this tends to show that the bees were attracted to the caged queen by queen odor; that they had no real sense of *possession* until they touched antennæ, and that the good news spread through the colony as quickly as sound could travel.

By the smoke method the bees are made to believe the destruction of their home is imminent, and their first thought is one of self-preservation, and that means the preservation of the colony through the queen, for a bee probably neither knows nor fears any death except the death of the colony. So the first cry sent echoing through the hive made assurance of the loss of the queen, and the fear of death possessed their hearts.

In nature a colony suffers the loss of its queen in only two ways, by old age, and this loss is expected and prepared for in a natural way; second by loss of the virgin on her wedding flight, and this in nature is the death of the colony. As the excitement in the hive subsides, the new queen is found within the gates, and just at this point I presume queen odor plays a part, for I have an idea, without being able to offer proof, that bees recognize a queen-bee chiefly by her odor, and their own queen only by touching antennæ. Remember, this colony has lost its queen in an *unnatural* way, and has received another in an equally unnatural way, and the bees are without doubt in two minds about her, recognizing in her a danger if their own should be recovered and a necessity if she be lost.

When bees are dequeened they are slow to give up hope of finding their own again, and may be seen running around on the alighting-board and up and down the end and sides of the hive in an endeavor to locate her, and while this continues I doubt if the new queen is entirely safe. She is balled and held prisoner oftener than we think, but nature inclines them to accept this strangely acquired queen in preference to the dangers attending the rearing and mating of a virgin.

One other point in regard to this smoke method of introduction. It so demoralizes the bees that even if you have not removed the old queen, the new one may safely enter, even robber bees may do the same, and when the colony recovers from its demoralization, the new queen protected by her queen odor may still be accepted and become the head of the colony if the old queen is weak and failing, for this also is an advantage to the colony over rearing and mating a virgin to supersede the old queen.

These ideas are only the ideas of an amateur, with a few colonies, but those colonies have been studied closely, and I presume bee-behavior is much the same in ten colonies as in ten hundred.

Audubon, Iowa.

[We have often suggested that the queen odor pervades every normal colony. As soon as this odor is gone, the colony becomes restless and begins to look for its queen. It takes more or less time, but rarely more than a half hour. That the queen has a very strong odor is evidenced by the fact that after you have handled a queen, some of her bees may follow you and alight upon your fingers, for quite a while, in search of her. When they notice her absence they are certainly prompt in informing the rest of the colony.—Editor.]

Smoker Fuel—Cumarin in Sweet Clover

BY A. F. BONNEY.

Like every other person who dabbles in the bee-business, I have had my share of grief with fuel for my smoker. I reduced my chances of immortality by using, or trying to use, hickory wood, burlap, corncobs, dried dung, planer shavings, excelsior and what not, until in desperation I tried "greasy cotton waste."

It worked so well that I continued using it until, running out of waste, I wet cotton rags with a cheap machine oil, and the result was all right. Then I got hold of some waste that fairly reeked with grease. I think the oil might have dripped from the mass had I held it a while, but I was in a hurry, so I set fire to it, poked it into the smoker, blew a few fiery blasts from the nozzle and went to work. I used it two or three hours, put it out by laying the smoker on its side with the nozzle plugged with leaves, fired it up again that afternoon and the next day. There was not a moment that I did not have an abundance of thick, acrid, cool smoke at my command, and I needed it, for I acquired some bees this summer that had no respect for my person or attainments, and the way they injected the rheumatic cure into my circulation was a sin and a shame.

I think I was practically the first writer to question the statement that cumarin is bitter. I had isolated some from tonka bean, and found it practically tasteless. Moreover, it is used to cheapen vanilla. Were cumarin bitter it would be unavailable for flavoring.

Mr. Westgate, agronomist in charge of clover investigations at Washington, D. C., writes me as follows:

"The question as to the flavor of cumarin is interesting, as the bitter taste in sweet clover has usually been attributed to the presence of cumarin, whereas if, as your man states, cumarin is not bitter, we are either in error in calling the flavor of sweet clover bitter or the bitterness is due to some other ingredient. I shall endeavor to keep in touch with this subject, and if we are able in anyway to have another analysis made so that the really bitter principle can be isolated, I shall be very glad to obtain definite information along this line."

I think we may now decide that the "bitter principle" of sweet clover is an individual element; that cumarin is not bitter; that either the bitter principle or the cumarin, or both combined, tend to prevent fermentive indigestion (bloat) in cattle, while it may turn out that, when as many cattle eat sweet clover as there are eating the white, there may be cases of "bloat" develop. Not one animal now eats sweet clover where thousands eat of the white. I think it is possible that we are jumping at conclusions—but it is a nice dream.

Buck Grove, Iowa.

The Olfactory Sense of the Honey-Bee

BY DR. BRUNNICH.

In the June number of the American Bee Journal we have read a most interesting article on certain sensitive organs in the honey-bee, the function of which the author claims to be an olfactory one. Having occupied myself since many years with the anatomy of the honey-bee, the matter interested me highly, and the author, N. E. McIndoo, of the Entomological Bureau in Washington, D. C., had the great kindness to send me his papers on the matter, concerning, first, the honey-bee; secondly, different hymenopters; thirdly, certain araneids. For

Dr. Brunnich

our readers, the first paper has the greatest importance, and I will allow myself, in the following lines, to tell my opinion, though I cannot give an authoritative conclusion:

Whether the views of the author be right or false, it is sure that the experiments made are exceedingly assiduous and highly instructive. Some of the preliminary experiments having a practical and theoretical value for the beekeeper, I wish to review them.

Mr. McIndoo worked with small observation cases, where the bees had free air, and where they could be watched closely through a glass. As food, he gave them candy and sometimes water. He operated with normal bees, queens and drones, and with bees mutilated in different manners:

	Lived days	Average days
Normal bees (5 to 30 days old)	3.0 to 24.0	9.1
Isolated bees (middle aged)	4.3 to 33.9	11.8
Young bees, one day old	0.7 to 13.0	5.7
Isolated bees, freshly emerged	1.7 to 26.2	4.8
Queens (with bees)	12.0 to 27.0	16.5
Drones (with bees)	0.6 to 13.0	3.4
Bees with wings cut off	1.8 to 12.1	9.2
Bees without stings	1.0 to 6.0	1.7

In the first line we see that bees which are not allowed to fly and work have an exceedingly short life. (Our bees in winter live 9 months.) The causes given by the author (page 279) do not explain the matter, neither am I able to give an explanation, for the want of an occasion to fly, the missing of pollen and perhaps water give no sufficient explanation. Certainly it is not to old age we can attribute the fault. Neither does the missing of company seem to be the cause, for isolated bees live on the average as long as a dozen bees in company. It is perhaps a hint to us, that quite young bees imprisoned have a very short duration of life. We see that bees which have lost their sting are practically useless on account of their short life, and it is therefore not a bad practice to kill each bee which has stung.

McIndoo made, as the readers have learned, experiments especially with very strong smelling substances. I believe that, in this case, the effect on the bees is less an olfactory one than a chemical one, like the smoke of tobacco, *i. e.*, the molecules affected by the tracheas go into the blood of the bee and have there directly an exciting influence. The fact that bees without feelers are unable to live longer than a few hours, that they are unable to recognize foreign bees, that a queen without feelers can no longer fulfill her duties, proves strongly what important sensitive organs are situated in the antennæ. Probably the bee possesses in the antennæ, besides other senses, the sense of hearing, but the audition sense is certainly by far less important than the olfactory one. The different experiments with bees by cutting off parts of the antennæ, by covering as exactly as possible the new sensitive organs in the base of the legs, wings, etc., certainly have been made exceedingly minutely, but all such operations are relatively so rough, for so delicate an organism as the bee, that they do not prove much.

To me, the experiments have not proved that an olfactory sense is *not* situated in the antennæ, nor that the newly discovered organs represent a unique olfactory sense. For the solution of such problems, comparing the physiology of beings of the same class may be more fruiting than rough physiologic experiments upon such small beings as bees, ants, etc. It is a well known fact that insects whose smelling sense is but feeble, have very primitive antennæ. There are for instance male butterflies, which find the female in a distance of some miles, even if the female is imprisoned in a dwelling room, and they have highly developed feelers. Where the female is to be sought by the male, the antennæ of the male are by far more perfect than those of the female. With many an entomologist I am of the opinion that the comparative physiology of insects proves directly that in the feelers is the abode of an olfactory sense, especially a sense for the most subtile odors. That does not exclude the existence of other sensitive organs, which help the perception of odors.

We have seen that the sensitive organs described by McIndoo are located especially near the tracheal holes of the breast. I have found by examining the plates of the segments of the abdomen the same formations (but not very numerous) which the author describes. My idea is that these organs are a protective apparatus against injurious gases; acting as does our own olfactory epithelium situated in the respiratory channels which warns us of a pernicious atmosphere. In this sense they would represent an olfactory organ.

Recapitulating briefly I would say:

1. The sensitive organs described by McIndoo represent a protective organ, a kind of rough olfactory formation against injurious gases.

2. The sense for fine odors, for discovering honey sources, perceiving foreign individuals, sexual odors, etc., is situated in the antenna.

Zug, Switzerland.

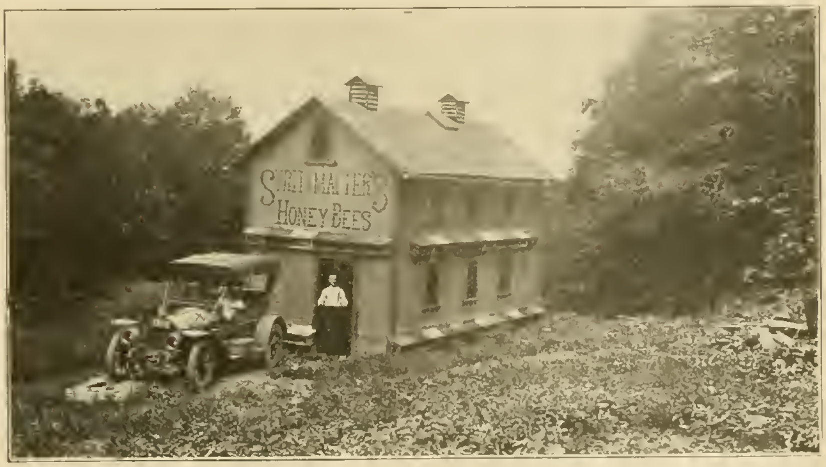
House Apiaries

BY F. J. STRITTMATTER,

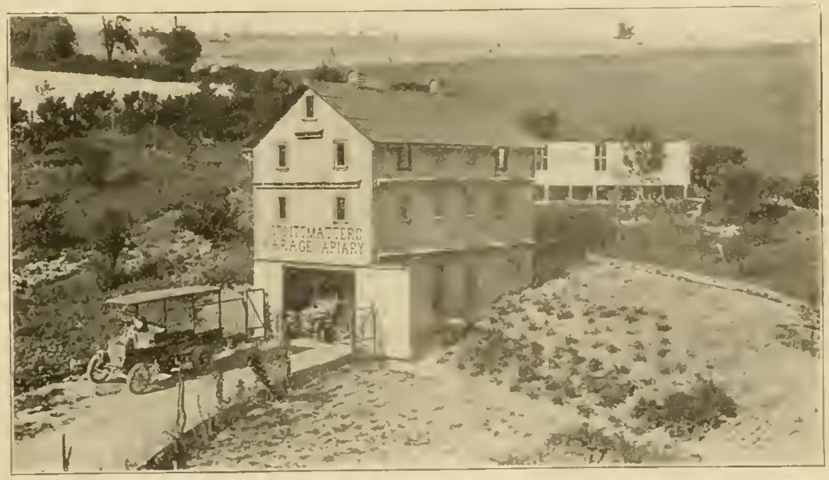
(*Paper read at Harrisburg, Pa., Feb. 21, 1914.*)

THE subject of house apiaries is one to which I have given a great deal of thought the last five years or more. We built our first one March, 1910, at an out-yard near Ebensburg, Pa., and put the bees into it the same spring, starting at about the same time a regular out-yard, using 10-frame chaff hives at the latter yard near Carrolltown.

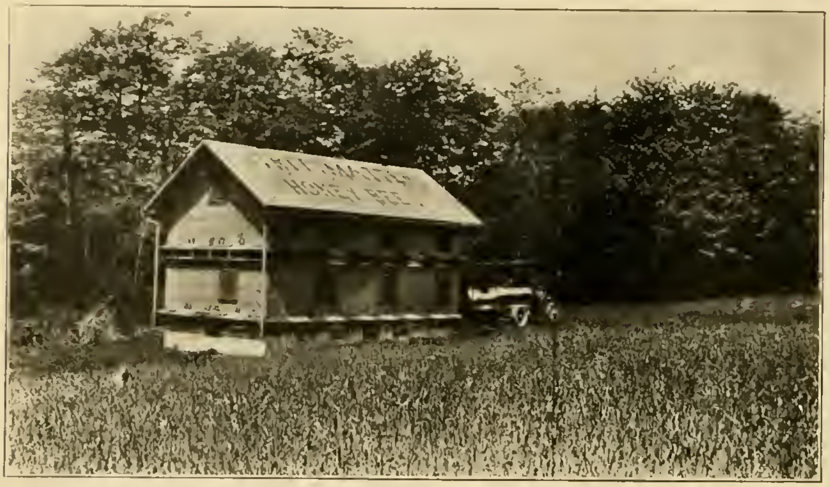
The first three seasons the bees in the house apiary always came out a



STRITTMATTER'S CARROLLTOWN HOUSE APIARY



HOME APIARY OF THE STRITTMATTERS NEAR BRADLEY JUNCTION, PA.



Noel House Apiary Near Ebensburg, Pa.—Another of Strittmatter's "Yards."

little ahead: besides, the bees were much nicer to handle, and we were more independent of weather so far as our work was concerned. This house apiary is 14x28 feet, 2 stories, having 75 factory-made hives placed in same, and costing about $400 besides the hives.

In the latter part of the third season, or 1912, we decided to get all our bees into house apiaries as soon as we could, and proceeded to build a combined house apiary and garage at our home place. We had this building completed and the bees moved in about the first of October. This building is 20x30 feet, and 3 stories; the lower one being dug into the ground in a sidehill and used for garage, while in the upper two stories we have built in 86 hives. This building cost, complete, including hives built in, about $600, and we found we were able to make it *much more convenient* to handle the bees in this one than by our own first arrangement of using factory hives inside of the building.

In 1913, we proceeded to build our third house apiary, which is built after the same general plan as the one at our home yard, only it is but 2 stories, and for bees only. This building is 12x24 feet, 2 stories, containing 62 hives built in solid, and cost about $300.

In all these house apiaries we have ample room for supplies in the same building, and we can have them very much handier than by any other system I ever saw, besides having everything in the dry, and safe from thieves and meddlesome boys, but one of the greatest advantages is that I can work right on in most any kind of weather in season, and there is practically no stinging inside the building, even when no honey is coming in. I seldom need veil or smoker, and no amount of opening hives and manipulating will tend to cause robbing, as no bees from other colonies know anything about the hives being open, as no bees can get into the building anywhere except through their entrance direct to their hive, except bees from such hives as are opened by the operator.

We have all hives which are built into these buildings arranged with about 4 inches of sawdust or other packing material around the bees. Our hives are all the regular 10-frame size, using the same frames we had in our chaff hives, and we also use the same supers which we used outside. By cutting small corners out of all window panes, any bees getting into the building from hives opened can get out very readily, and by means of screens and home-made bee-escapes on the outside, we have made it so that they do not get back into the building this way.

The first house apiary which we built is made of boards covered on all sides with a good grade of valley tin, and the hives on the inside are arranged in pairs with room between the pairs to work. The front end of the hive is placed up to the side of the building with entrance cut out through. But the latter two are built of studding placed 24 inches from center to center, and weather-boarded on the outside after having two piles of good building paper tacked on the studding. One ply, the ply next to the weather-boarding, is tar paper.

The hives are built with one hive to each space between the studding, and as our supers measure about 20 inches, outside measure, this allows about 4 inches in the clear between supers when they are on the hives. We find this is ample room for handling.

Our first house apiary has proved very satisfactory; in fact, more so than we expected, but our later ones we like very much better. As to cost, we consider it as cheap or cheaper in the end to build outside house apiaries, provided you can buy the ground reasonable, as to keep bees outside in chaff hives; and single-walled hives do not prove satisfactory unless protected liberally for winter in our locality.

As the pictures show, we have an alighting-board as well as a roof board to protect the entrances and give the bees better chance to fly into hives, and the same are painted different colors to help the bees to locate their respective hives. In these house apiaries we invariably find the bees come through the winter with hives dry and free from mold in the spring, while we have considerable trouble with our hives outside. One important thing is to make everything mouse proof, and to have plenty of windows of ample size so as to have good light.

I might say that the main reason the third house apiary cost us less than the first one is that we learned how, not only to make it better, but we were able to make much better time in the work of building, and had a little better help. We did not, however, hire any carpenter at this building, but had a good all-around handy man whom I helped most of the time, and who was more careful to do things as I told him than any carpenter I ever hired.

It will be noticed that in our latter two house apiaries the hives are arranged with the side to the wall, the entrance consequently on the side of the hive, giving a much more convenient arrangement to handle the bees. The hives being solid, if you wished to hive a swarm by the return plan, you could remove the frames to another hive and place empty frames in their stead and cover up, and you accomplish the same thing as by moving the hive. However, we did not have a swarm last season, which makes me think that the house apiary is a big improvement in this line.

Ebensburg, Pa.

The Economics of Beehive Architecture

BY J. E. HAND.

THE interesting article on page 309, by Mr. D. Barone, shows that he does not understand my real position concerning the hive question, for I do not advocate extra large hives except when the extra capacity is utilized for the development of principles and the solution of problems aside from the office of honey production, hence the same large hives that I formerly depreciated, I still depreciate today, for reasons herein explained.

THE HYPOTHETICAL QUESTION.

While certain principles of architecture may render a hive superior to others for section honey, yet in its allotted sphere, aside from the points of economy and utility just mentioned, one hive is as good as another up to the limit of expansion sufficient to fully develop the fertility of the most prolific queens.

The hypothetical question is, "What is the orthodox limit of expansion of brood-chambers?" A correct answer to this question is extremly difficult except by a correct hypothesis relative to the amount of old honey on hand, the amount of new honey and pollen stored in advance of needs, and the amount of drone-comb. Since these conditions differ with different colonies and different seasons and locations, it is impossible to correctly estimate the number of available breeding cells a hive will contain without seeing it.

In my location, in view of the contingencies mentioned, and the extra prolificness of some queens, a hive of less than 14-frame capacity may represent a loss in bees, and a corresponding loss in honey production from lack of room to accommodate the queens, and equally evident that room in excess of that limit is out of place in a brood chamber unless utilized for the solution of problems aside from the office of honey production, in which case it may become so profitable as to decide the issue in favor of hives that exceed the orthodox limit of expansion; for a hive cannot be considered too large so long as its capacity is fully utilized for the development of economical principles and the solution of important problems, unless the operation interferes with honey production. Since the 10 and 12 frame hives are too large for vertical expansion and too small for the economical solution of any important problem, they occupy an inferior position in the economics of beehive architecture, hence their only redeeming feature is economy of equipment and manipulation, and they do not excel in that.

VERTICAL EXPANSION.

Since the principle of vertical expansion applied to 8-frame hives makes them equal in capacity to 16 frame hives with horizontal expansion, it is clear that I have not discarded small hives for large ones, but, rather, changed from vertical to horizontal expansion and contraction to facilitate the solution of problems that cannot be solved by vertical expansion. The size of 8-frame hives adapts them for vertical expansion, by tiering up, doubling their capacity during the breeding season, and during harvest contracting them to a limit that forces all the white honey into the supers, depending upon cheap fall honey or still cheaper sugar for winter stores.

With a man like Dr. Miller, who will do the right thing at the right time, this system is second to none for section honey. But it is not a let alone hive, hence with the careless and indolent will rank inferior to the two larger hives. It is further objectionable on account of extra equipment and excessive manipulation, likewise for its non-solution of any problem in economics.

HORIZONTAL EXPANSION.

The 16-frame hive admits of an equal degree of *horizontal* expansion by means of a sliding follower, without handling hives, and with the advantage of having a brood-nest of any desired capacity from 1 to 16 frames without giving too much room at any time; making it equal to the 8-frame hive for section honey, and superior to any for extracted honey; for it has a super of 100 pounds capacity practically surrounding the brood on three sides, with extracting combs in the right proximity to insure perfect super work with economy in time and labor of bees, which in connection with its economical solution of intricate problems makes it a general utility summer and winter hive, economical in construction, simple in equipment, and positive in results.

THE SOLUTION OF PROBLEMS.

There are problems to solve aside from the legitimate office of honey production, bearing directly upon the economics of beehive architecture, and the correct solution of these problems demands a hive capacity that exceeds the orthodox limit of expansion, hence the advent of the 16-frame convertible hive. This refers to the increase problem, the swarming problem, and the wintering problem; for 16 frames is the minimum capacity for the correct solution of these problems, as briefly demonstrated herein.

THE SWARMING PROBLEM.

Another season with these hives has proven that swarm prevention is not a matter of hives and excessive manipulation in looking for queen-cells, etc., but rather a matter of correct methods of requeening. Extra hive capacity facilitates the operation. Here is the method:

At the approach of the honey flow, place all colonies in condition to do super work, by uniting and equalizing, and at the beginning of harvest take two frames of brood with adhering bees, including the queen from each colony, and place them in a separate hive; now insert a ripe queen-cell in a cell-protector, between the combs. This will prohibit swarming with little manipulation, regardless of hives; meantime, remove queen-cells that may be found while looking for the queen. This method also materially aids the economical solution of the increase problem.

THE INCREASE PROBLEM.

At the close of basswood harvest, after the honey crop is secured, cage the queens in the nuclei just mentioned, and take six frames of brood with adhering bees from each 16-frame colony and place them in each nucleus hive which will now contain 8 frames, and the parent colonies 10, and both have laying queens. This gives 100 percent increase in connection with a full crop of honey, with little manipulation, and this method of horizontal contraction likewise operates for the economical solution of the wintering problem.

THE WINTERING PROBLEM.

Mr. Barone is viewing the hive situation from the standpoint of outdoor wintering, but fails to provide suitable winter protection for the North, assuming that large hives and correspondingly large clusters of bees are sufficient protection. It is my opinion, however, that in the latitude of northern Ohio, good winter protection is imperative. Sixteen frames is the minimum capacity for the economical solution of the wintering problem, and here is the method:

About Sept. 20 choose a warm day when bees fly freely, and place each of the contracted colonies resulting from increase in an 8-frame box 12½ inches deep without bottom, and ⅜-inch thick; said box including bees and combs is placed on the floor inside of a 16-frame hive without changing the position of the entrance; the frames extending lengthways with the hive. It creates a space of 3 inches between the walls of said box, creates a space of 3 inches under the frames, and a 16-frame super holds 7 inches of packing on top of the winter nest.

It is thus that I change a single wall summer hive to a perfect wintering repository with the greatest economy, and the 16-frame convertible hive is so competent and the system so organized in every detail that the solution of one problem materially aids the solution of the next. It costs approximately 50 percent less to construct a 16-frame hive than to make two 8-frame hives. The fact that hive excels in honey production also, stamps it as an improvement not to be ignored. Upon this platform I stand, and upon this hypothesis is constructed "the 16-frame convertible hive."

Birmingham, Ohio.

A Bee Cellar

BY JOHN HENDRICKS.

I AM intending to build a bee cellar this fall. As I have had no experience in cellar building and cellar wintering, I approach the task with considerable misgiving. Since my knowledge of cellar building and wintering is all to be learned, I would like to ask some one of more experience for advice on a few points.

I intend to build the cellar 20x40 feet. The site selected is on the north side of my bee house, and at the top of a little hill of about 25 feet rise. I intend to excavate about 4½ or 5 feet deep, and put up a frame-work of 6½ feet, posts to support the roof. Over the rafters I shall put first a layer of straw, and then sufficient earth to keep out rain. I shall use enough straw to have the layer of straw about 18 inches thick after being pressed down by the earth. For ventilators I intend to make six boxes 4 inches square inside of boards long enough to extend from the floor to several feet above the earth of the roof. I shall put about 500 colonies in the cellar this winter.

Will these six ventilators give enough ventilation? How many colonies could be placed in a cellar of this size without endangering successful wintering? I expect to set the hives in six rows lengthwise of the cellar. These rows stacked six high would give room for about 900 colonies. Would this be too many to put in such a cellar? The entrance of the cellar will be to the east with a vestibule and double doors.

Powell, Wyo.

[The principal requirements of a bee cellar are dryness, pure air and sufficient warmth. A cellar in which the temperature would go below the freezing point would be objectionable, because it would cause the bees to consume too much honey, and their bowels would become loaded with fecal matter. But a room in which 500 colonies are kept is already pretty well warmed by them, and there will be very little danger on that score, in the cellar proposed, since it will be well covered with straw and earth.

Pure air would perhaps be more positively secured if instead of six tubes extending to the bottom you made half of them to extend only from the inside of the roof to the outer air. These would secure a greater amount of circulation. Otherwise, the upper part of the chamber would retain the warm air and the ventilation would be imperfect above. The upper openings would probably not need to be as large as the lower ones, and 2x4 inches would be sufficient. If the entrance to cellar is of easy access, it will not be difficult, by the use of a thermometer, to keep the temperature to the point where the bees will be quietest, which is usually between 40 and 45 degrees Fahrenheit. I would close the outlet of the tubes with a screen to keep out mice and insects.

Dryness is of great importance. I have seen the combs mold in a damp cellar. The elevated position of your cellar would probably insure its thorough drainage.

On the whole your plan is good. If possible, place your hives on timbers so as to elevate them a few inches above the floor. Leave the covers and bottom-boards on the summer stands and give plenty of room between the bodies. However, if your bottom-boards are 2 inches deep, like those of Dr. Miller, or if you can give a large space between the body and the bottom, there is no objection in bringing the hives in with their bottom-boards. There must be a good circulation of air, the more so if there is any dampness.—EDITOR.]

Honey Hiding Places

BY DR. LEONARD KEENE HIRSHBERG.

THE flowers have wonderful hiding places for their honey. Not every flower, it is true, counts honey among its assets, not even all the showy ones such as the poppy and the rock rose, who seem to make the greatest efforts to attract insect visitors, still those flowers—and they are many—that do produce it have evolved all sorts of devices for hiding it away. But these honey hiding places—like the priest's hiding holes in ancient mansions—are meant to be found by the right sort of visitors, and are only hidden from rude intruders. When they do occur, they are part of that plan of structure and mechanism which nature, the great architect, has laid down in each individual flower. They are so arranged that an insect visitor in search of honey must pass along a certain path if he would arrive at it. It is his passage along this path and the ensuing consequence of his becoming a pollen carrier—and hence a cross fertilizer—that the plant desires.

In the large majority of cases the honey is tucked away in the flower itself, though there are striking exceptions, but even within the narrow limits of a flower there is the greatest possible diversity in its position, and there is no part of a flower which is not made, in one plant or another, the carrier of a honey bag

One of the most striking shows of honey in this country is that which is discovered in the recesses of the crown imperial lily. There, at the center of the brilliant hued perianth, can be seen six large honey pits, one on every floral leaf. Each is brimming over with a big drop of honey glistening like a tear drop. Shake the flower and it "weeps" as the big drops fall from it, soon to be replaced by other "tears" in the quickly secreting flower.

"Job's tears" the country folks sometimes call lachrymose plants. In the Martagon lily the honey is confined in swollen veins or channels which traverse the perianth leaves, rivers running with sweetness. The snowdrop, little as it is suspected of honey tendencies, nevertheless has also veins of nectar coursing through its fragile whiteness.

Honey is very rarely produced in the sepals of the flower, but in the nasturtium instead of being small, green, and insignificant, as is the general rule, they are brilliantly colored and rival the petals in glory. One of them takes upon itself the function of honey providing. It is produced backwards into a very long pointed spur which is quite hollow, but which, if bitten, gives a taste of sweetness mingling with the usual acridness of the flower, the sweetness chiefly lying at the remote tip.

FRED OPPRIGHT IN HIS APIARY AT SENECA, WIS.

The county paper of the county in which Mr. Oppright lives, recently had an article about him, entitled, "The Sweetest Man in Seneca." Mr. Oppright has had forty years' experience and hasn't lost a colony during winter in fifteen years. He runs for comb honey.

It is the petals of a flower that most frequently are the honey carriers, but even they have no uniform plan for performing this office. The buttercup, for instance, places a honey-sac at the point of insertion of each of its golden petals, so that there are five honey-sacs lying in a ring beneath the multitude of stamens. The columbine's petals are marvelous contrivances, elaborately designed for honey hiding places. Each is circular, hollow, and shaped like a horn. In each the honey is secreted in a round knob at what would be the mouthpiece end of the horn, and the five are arranged in a ring, side by side with the honey knobs aloft. Though the honey store is obvious from without, yet the insects who would sip it must creep into the flower and penetrate with a long proboscis up the curving horn to the knob.

Sometimes the petals are joined together into a tube and the sweet nectar simply exudes from the inner side of the wall and collects at the bottom. This is the case in the dead nettle, the corolla tube of which, pinched from the stem, forms so toothsome a morsel that the children call it "suckies." The honeysuckle is similarly planned, and its sweetness is so striking a feature as to have given it its name.

At other times the petals change completely into honey-bags, pure and simple. This happens in the Christmas rose, where the petals are represented by a ring of small greenish tubes staunching erect—the white sepals are the attractive feature of this flower—which tubes are merely storehouses for the flower's nectar, and a very obvious part of the flower. In the monkshood, which belongs to the same family as the Christmas rose, the nectaries are extremely quaint. If the hood which gives its name to the plant be drawn back there suddenly springs into sight two objects on long stalks, which are sometimes like a French horn, sometimes like a cowl, or looked at sideways, not unlike a pair of doves. Their presence within the hood, just as two people might be in a room, has given the plant the curious name of "Adam and Eve" and "Noah's Ark." Thus are the honey-bags carefully tucked away and protected by the monkshood. Indeed, so little hint does the flower give of their presence from outside that unless a person has actually dissected a flower for himself, he is absolutely ignorant of them, though they are most striking in appearance when their hiding place is once discovered.

There seems no end to the ways in which petals can secrete honey. In a few plants, as in the mullein, the nectar exudes from the upper surfaces and lies sparkling like dew upon them; in other cases, as in the wild valerin, there is a minute pocket at the side of the petal tube which contains it, and so on. The petals play much the largest role in honey producing.

In the globe-flower there are very curious spoon-shaped honey glands, which stand in a mug just outside the many stamens.

The marsh plant, "Grass of Parnassus," boasts of even more singular structures which are, at the same time, very beautiful and lend an air of uniqueness and delicacy to this attractive flower. On the inner side of each petal is a lyre-shaped object composed of the finest green filaments, each tipped with a tiny knob. These filaments arise from a piece of flattened green tissue. Though at first sight one would imagine that the tiny knobs were the honey glands, yet investigation shows that they are hard and dry, and contain not one particle of nectar, while the disc of tissue is really the honey-sac. So it follows that the lyre-like superstructure is pure ornamentation, which, perhaps, also serves as a lure or bait for insects, for they would readily fly towards the tipping knobs, and though they would be disappointed in this, they would quickly discover that there was honey below.

Pansies and violets have an elaborate honey apparatus. On the back of two of the dumpty stamens is a long slender lump, which has a honey-sac at its extremity. These lumps are both carefully enclosed in a violet-like pouch leading off from one of the petals. Into this pouch the honey trickles, and it is to this reservoir that an insect must push its way if it would partake of the good things provided. In its passage thither it perforce knocks its head on the stigma and thus lets loose on to its back a little pollen which was stored up behind it. This pollen is transferred to the stigma of the next flower visited. By acting as carrier, the insect pays for its feast.

In one of the anemones there is another scheme for a honey-hiding place. Here the outer rings of the many apparent stamens are merely dummies and produce no pollen at all; instead they secrete nectar, and as insects sip the honey they become dusted over by the genuine adjacent stamen. This strikes one as a very cute arrangement.

To find honey on or in connection with the ovary or seed-box is far more uncommon, still it does occur at times, as, for instance, in a ring around the seed boxes of the snapdragon and the wild convolvulus.

A unique set of honey glands is found in the spurges. On a little wall around the insignificant and peculiar flowers are set crescent shaped bodies which can be distinctly seen by a careful observer. The honey lies on their upper surfaces. The curiousness of their appearance helps to lend a distinction to the flower which it otherwise lacks.

Again, honey is occasionally found outside the flower. On the stalks of cherry leaves, close to their base, are two red lumps the size of pin heads. These are nectaries, though they are rarely looked upon as such. On the lower part of the leaf of a bean are a couple of honey glands, while the laurel leaves, too, provide quite a feast, around which the contented hum of the bees may be heard. You can easily see why the flowers provide honey and attract insects, but it is not quite so simple a matter to understand why these and other leaves should do so. It is suggested, however, that there are many small insects which creep away again without performing the necessary office of fertilization, owing to their small size. So various plants have provided this honey on or near their leaves to attract these unwelcome guests from the flowers. The honey is so obvious, so easily obtained, that they fall into the pleasant trap laid for them, and do not trouble the flowers. This is particularly the case with ants. Though no doubt the bees and desirable visitors likewise dine upon this outside honey, yet they will be attracted by the flower's untouched supplies and visit them also, having larger appetites to satisfy.

In certain cases, as in the sundew, honey is used as a cruel lure. On the nearby hillsides the sundew's leaves glisten with sparkling drops, as the name implies. Flies—insects of all kinds—hasten towards the proffered banquet. They alight, but at their first touch the hairs which stand erect all over the leaves close over, and the victim is soon cushed to death and its body juices absorbed by this carnivorous plant.

The amount of honey in plants differs enormously. Sometimes it is the merest suggestion of sweetness, almost unnoticeable; at other times it is plentiful enough for a child to pluck the flowers and suck them; while, again, several large drops may exude, as in the Crown Imperial lily. In some places there is a plant called melianthus, out of which honey literally pours like a little rain when it is shaken; and one of the orchids has two small horn-like spines from which honey constantly drips until the lower cup-like petal is filled, perhaps to the amount of several teaspoonfuls.

Baltimore, Md.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Feeding Sugar to Get Honey

If in your judgment it would pay to feed bees right along through the season all the sugar at 5 cents per pound that they will use to have them make honey to sell at 15 cents per pound, will they neglect the fields to feed on the syrup? VIRGINIA.

ANSWER.—It would be very unadvisable, unless you want to get Uncle Samuel after you. To feed sugar so as to sell the resulting product as honey would be rank adulteration, for the product would not be legal honey. Indeed, one should strive to avoid as much as possible feeding sugar syrup for the use of bees, lest some of it should get into the surplus.

Wintering Out-of-Doors

On account of my apiary being some distance from my cellar, I am thinking strongly of wintering outdoors. My bottom-boards are the reversible with the deep side 2 inches. My hives are 10 frame dovetailed.

1. Should I use the deep side for winter?
2. How much of the entrance should be closed?
3. Would it be safe to wrap the hives with extra heavy tarred felt, with no other protection?
4. If it will be necessary to put a shallow super on top to hold the packing, what are the different kinds of material that can be used? WISCONSIN.

ANSWERS.—1. Yes.

2. The equivalent of 2 or 3 square inches will probably do well where you are, the latter for a very strong colony.

3. Probably, but something depends upon the exposure of the situation. If exposed to the full force of the winds, it will be hard to wrap the hive warm enough, but in a situation well sheltered from the winds there will be little trouble.

4. Any loose substance that will allow plenty of air to be contained in it without allowing the air to move freely, as dry leaves, chaff, planer shavings, etc.

Temperature of Bee Cellar

My cellar (28x30 feet) has a hot water boiler in it. The temperature varies from 48 to 52 degrees. Do you think I can winter a dozen colonies of bees in it successfully? MINNESOTA.

ANSWER.—It ought to be a capital place. Without letting light into the cellar you should keep it open enough to have the air always fresh, not cooling it below about 45 degrees.

Shallow Extracting Supers

I read in "Langstroth on the Honey Bee," that you use shallow extracting supers. Do you think bees will store more honey by their use? Have you tried the full depth Langstroth and shallow frames side by side? IOWA.

ANSWER.—To the first question I will say no; nothing in a hive except its capacity for brood-rearing and storing can have any effect upon the amount of crop. The advantages of a hive lie principally in the manipulation that it permits.

To the second question I will reply that we have tried full stories and shallow stories side by side, not singly or in scores but by the hundred. That is why we have changed to the shallow super.

But an explanation is necessary. We use a larger hive than the regular Langstroth. Its frames (Quinby size) are 2⅛ inches deeper than those of the Langstroth hive. When we used another story, the upper frames filled with honey were exceedingly heavy and difficult to handle. We also tried the Langstroth hive in the same way. We had at one time 150 Langstroth hives on which we used both shallow and deep supers. We preferred the shallow supers. But our supers are not so shallow as those usually made. They are 6⅝ inchess deep, so that the inside capacity of the shallow frames is about 5⅜. We prefer them to the full story supers for the following reasons:

They are easier to handle. The weight of a story full of honey is only about two thirds that of a deep story. We add stories as needed.

The queens are less apt to move out of a full size brood-chamber into a shallow story to breed than if it were a full story. We explain this by the fact that a shallow story is more promptly occupied with honey than a deep one.

If the weather is cool and the crop slight, there is less loss of heat in a shallow upper story than in a deep one. For that reason the bees appear to occupy it more readily.

With full upper stories, it has often happened that the bees would move entirely from the lower to the upper stories in the fall. This has never happened with a shallow story. For the same reason they will put more pollen in a full upper story than in two or even three shallow ones.

The shallow combs which we use are most easily uncapped with a single stroke of the knife. We have not yet seen full story combs that could be uncapped as promptly.

We have used shallow story supers for about 45 years. Every season we are the more confirmed in our preference for them. The only argument against them is that they are not interchangeable with the brood-combs. But neither are most of the supers in common use.—EDITOR.

Moth

1. I had two weak colonies which I was going to unite, but found a weavy web on the combs and in them were a handful of small worms. Those on the comb were about three to the inch in length, and not a live bee to be found and no honey. The worms resembled cut worms.

2. What made the bees leave the hives?
3. Is that comb of any use to put in other hives?
4. How did the worm get in the hive without the bees destroying them?
5. Which is the best way to winter bees outdoors? MINNESOTA.

ANSWERS.—1. The worms were the larvæ of the bee-moth.

2. It may be that they were queenless and dwindled away.

3. Yes, unless too much of it is destroyed.

4. Eggs were laid in the hive by the moth, and from these eggs worms hatched.

5. The ways are numerous, the chief thing being that the bees should be protected from the severity of winter by being in a place sheltered from the wind and having something about the hives, if it be but cornstalks. Some have an outer case, allowing a packing of leaves, planer shaving or other loose material about the hive to the extent of 3 or 4 inches, and 6 inches on top.

How to Prepare a Swarm for Winter

How should I care for a swarm of bees captured June 15? I did not know of the swarm until late in the evening, and they were put into an old-fashioned box-hive with home-made frames and no foundation or combs to start with. There must have been at least 5 quarts of bees.

There is quite a little white clover in bloom. Would it be advisable to put the sections in the super and let the bees into it this summer or keep them confined to the body of the hive? I am more anxious to keep the swarm in condition to carry through the winter well than to have them store surplus honey this year. I have no other swarm, and know very little about handling them. ILLINOIS.

ANSWER.—The season being so poor, it may be all you can ask the bees to do to fill their hive for winter, especially if the hive be pretty large. Still giving them surplus room will not be likely to intefere with their wintering, for they are likely to look out for themselves and fill their brood-chamber before doing anything in a super.

Sections from Foulbrood Colonies

1. Is it safe to use section boxes over again with drawn comb and without comb that have been on colonies that had foulbrood?
2. How does the bee-moth get a start? It seems to start after combs are taken off the hive. PENNSYLVANIA.

ANSWERS.—1. I should not be afraid to use them in case of European foulbrood, but with American foulbrood there might be danger.

2. The beginning is an egg laid by the bee-moth, and this hatches out into the larva, or "worm," as it is commonly called, in which state it does its mischief in destroying honey combs, after which it changes into the moth. The trouble seems, as you think, to be worse off than on the hive, because off the hive there are no bees to protect the combs, although the eggs are generally laid on the combs while they are still in the care of the bees. It seems strange that the bees will allow the moths to lay their eggs in the hive, but they do. At least black bees do, although Italians seldom allow it.

Increasing—Requeening—Transferring

1. I have two colonies of bees that I want to increase in the spring. Would it be best to leave all the honey for them this winter?
2. I want to buy some queens in the spring. How shall I arrange for them?

How is the division-board used, are all

A HIVE GOTTEN UP BY FRANK L. ABBOTT
10-frame. He runs for comb honey exclusively.

the racks left in, and the board put in and the bees work on one side only?

4. A neighbor has a colony of bees in an old-fashioned gum. He wants to take the honey this fall and tells me I may have the bees. How shall I arrange for them, and when would be the best time to move them?

5. I have two colonies of bees; one has swarmed four times, while the other has not swarmed at all. In the heat of the day they cluster on the outside of the gum. What is the trouble, and why don't they swarm?

6. Does the queen-trap work satisfactorily to save swarms, and how do you manage it?

7. Should any of the drones be destroyed?

8. Is it necessary to feed bees during a drouth?

ANSWERS.—1. That depends upon how much they have. If you leave them 30 to 35 pounds for winter they will do just as well next spring as with double that amount.

2. You can make arrangement with any of the men who advertise to sell queens by writing to them in advance and asking them to have queens ready at a given time, you to forward the money just before time to ship the queens, or before that time.

3. Like enough what you have in mind is a dummy. Dummies are used a great deal; division-boards not so much. A dummy is made about as long and deep as a brood-frame, and may be any thickness from ¼ inch to an inch. A dummy at the side of the hive makes it much easier to get out the frames. Lifting out the dummy gives room to get out the first frame more easily. If at any time you want to use less than the full number of frames in a hive, the frames are shoved to one side, and instead of leaving the frame next to the vacant space exposed, a dummy is placed next to it.

A division-board is made longer and deeper than a dummy, so that it makes just a snug fit in the hive. When only part of the frames are used in a hive, the division-board closes up warmer than a dummy. No frames need be in the unoccupied part

4. You will drum out the bees into a hive, or first into a convenient box and then put them into a hive furnished with combs, and then split up the old hive and take the honey. If you have no combs you can use comb foundation, but combs are better. Of course you will have to feed the bees, whether you have combs or foundation, but it will take less feeding if you have the combs. The best time is immediately after they stop gathering the fall flow, which may be at different times in different places, maybe the last of August, and maybe not until October.

5. There may be no trouble at all; the bees merely being of such good character that they do not feel inclined to swarm Other things being equal, bees that never want to swarm are a good deal more valuable than those which swarm four times, or even once.

6. Under some circumstances a queen-trap works very satisfactorily, as when there is no one on hand to watch for swarms and hive them. In that case the queen is caught in the trap when the swarm issues, and in the evening or the next morning you can divide the bees, leaving on the old stand part of the bees and the queen in a new hive, and taking the rest of the brood and bees in the old hive to a new stand.

7. Yes, it is a good plan to destroy all the drones except in one or two of the best colonies. Better than to destroy the flying drones, destroy the drone-brood in the hive, and still better not to allow drone-comb in the hive.

8. No need to feed if there is plenty of honey in the hive, unless at a time when the queen ought to be laying the dearth continues so long that there is danger that the queen may stop laying.

REPORTS AND EXPERIENCES

Hard Year on Bees

This has been a hard year on the bees in this locality. No rain from the first of May to the last of August. We only got a little surplus from fruit and black locust blossoms. Since the late rains the fall flowers have come, and I think the bees will gather enough for winter. The price of sugar has gone up so I cannot afford to feed.

Martinsville, Ind., Oct. 10. J. A. LEWIS.

From a Deputy Inspector

The bees had a good fall flow here, and most of them will have enough to carry them through the winter. But as it is so late in the season some of the honey may not ripen and may sour and give them the diarrhea.

I spent 26½ days at inspection work, visited 79 yards, examined 978 colonies. I found 32 colonies diseased with American foulbrood, and 26 with European. I visited some places in which no inspector had ever come. They were glad to see me. I found in all 30 colonies queenless. One Frenchman had 5 colonies queenless I showed him how to insert in them combs of eggs and brood. Six weeks later he reported these to be among his best colonies. JESSE H. ROBERTS.

Watseka, Ill., Oct. 2.

Satisfied With Short Crop

I have so many reports of total failure that I feel satisfied with my short crop, about 12,500 pounds, and the hives overflowing for winter. Localities differ and methods also.

I have for years wintered bees outside in various ways and some in cellars Now all my bees are wintered in cellars, specially prepared with 6-inch tile below frost line, as an inlet for fresh air, and one foot square outlet in chimney. With this the temperature is the same at all times, and so far less than one percent loss. Hatching bees in hives when taken out in spring.

N. E. FRANCE.

Platteville, Wis., Oct. 10.

Observations from a Northern Indiana Beekeeper

October 17, 1912, I moved my bees from Noble county, in this State, to Huntington county, a distance of 36 miles, making the trip overland with a hayrack on a common farm wagon without springs, and notwithstanding the fact that I had the covers off the hives and the entrances screened to admit the air, the bees got quite excited, and when we got to the end of the trip I found some of them in rather bad condition. One colony in particlar had a comb broken out from the frame, and the honey was running out of the entrance with several hundred bees drowned in the honey. Not wishing to disturb them any more than absolutely necessary, I placed a hive-body containing plenty of honey on a bottom-board and placed the hives containing the brood-nest immediately on top, and a chaff super on top of this

The following winter proved to be an easy one for the bees, and I did not disturb them until March, 1913. This being a nice bright day, I determined to see how they were getting along.

The first one I examined was the one having the empty frame from which the comb had fallen, intending to remove the empty frame and replace with a full comb, but what was my surprise to find this colony good and strong and building new comb in this empty frame, having it built out about two-thirds with nice worker comb, and the bees clustered in true comb building attitude. So I replaced the frame and left it after seeing that there was plenty of stores to run them through.

I did not disturb them further until about April 20, when I removed the chaff supers. By that time this colony had the empty frame filled with comb (all nice worker except a small patch in one lower corner, which was drone-comb), and it was partly filled with eggs and brood. This was a revelation to me, as I never knew that bees would or could build comb in cold weather, but here was the evidence right before my eyes.

In September last I wished to change one row of hives, and in order to get it to suit my ideas it was necessary to move the ones at the west end a distance of about 50 feet. I did this one cool morning, and stopped the entrances so as to keep the bees in the hives intending to leave them thus all day, but along toward noon, when the sun had begun to get pretty hot, the bees begged so hard I opened the entrances and let them out, and how they did fly! Well, they circled around their previous location in perfect swarms; in fact, any one not familiar with the circumstances would have declared a swarm was in the air. Sometimes they would cluster on a block where the hives had been. These clusters sometimes being as large as my hand, and probably one or two inches in depth. Then these clusters would melt away only to form again near the same places.

Along about 3 o'clock p.m. they began to seek the hives, and by dusk there were but few stragglers left. The next morning every thing seemed normal in and about the hives, but when the youngsters came out for their flight the same performance was enacted as the day before except there were not nearly so many bees in the flying throngs. This performance was kept up every nice day for about two weeks. Of course, with rapidly decreasing numbers, as along towards the last, there were only a few bees to be seen flying in the vicinity of the former location.

I do not know whether they found their way back to their own hives or not, but it seemed to me that certain colonies received more than their share, and of course at the expense of some others, However this may be, the colonies all seemed to be plenty strong to go into winter quarters.

Recently while waiting for a train at a railroad junction, I got into conversation with an old gentleman whom I found to be interested in poultry, and as I am a poultry "crank" myself, and we were soon visiting like we had been old-time friends. Finally, the conversation drifted to beekeeping, and he confided to me that he had a friend who actually makes money with his bees. "But," said he in an undertone, "he has a mean trick of sowing this bad weed, sweet clover along the roadsides for his bees to work on." I asked him if he did not think sweet clover might be a benefit to farmers in some ways, but he did not see how it could be, and I did not try very hard to convince him, but I am thankful that the rising generations are being taught along these lines.

Ubee, Ind. E. H. UPSON.

[Mr. Upson is wrong in his supposition that it was the younger bees that were seeking the old location of the hives. It was rather the older ones After bees have once gotten the location of their colony, they never stop to re-locate when going to the fields, but rush out to the harvest. Thus the bees rushed from the colonies in their new positions and were unable to find their way back. They probably drifted promiscuously into the hives toward nightfall, being attracted by the roar of the colonies

It is wise when moving the location of bees, especially short distances, to lean a board in front of the hive or place some other obstacle there, so that the outgoing bees must of necessity notice and mark the change of location.—EDITOR.]

Toads Eating Bees

I obtained a colony in a 10-frame hive las spring, from a beekeeper in Vermont, and

Bee Shop, Honey House and Bee Cellar 18x30. Mr. Abbott of Palms, Mich., Winters 200 Colonies of Bees in the Cellar.

Bees are Protected from North Winds by a Big Board Wind-Break.—Apiary of M. M. Hale in Mississippi

was an extra large one and in fine condition at the beginning of the season. About the last of June I noticed one day that the bees did not seem to be flying very much, so one afternoon about sundown I went out in the yard to see what the trouble was, and I found a large toad seated near the entrance of the hive, and he was snapping in every bee that came from the hive. I tore up the entrance board and underneath it I found two more toads, which were as fat as could be

I am taking the beekeeping course here at the college. Homer B. White

Amherst, Mass., Sept. 22.

Hail Caught Bees in Field

I have been a beekeeper since 1887, but this summer I had an experience that I never had before, nor have I read of such a one. On June 18, my colonies (114) were booming with bees. I never had more promising colonies than I had this spring. On that day at about 1 o'clock there came a hail and rain storm so very sudden and so hard that it kept and killed the working bees right in the field among the yellow clover. The next day when I looked over my bees there were only a very few flying, and they got so depleted that during the cool June nights, which we often have here, much of the brood chilled, which was a second loss. Two more of my neighbor beekeepers shared the same fate. Of course, we did not get much good of the first, and generally the best honey flow, for we had no field bees.

Ferron, Utah. John Zwahlen.

Twelve Pounds Per Colony

We had another dry and extremely hot season; no rain from the opening of spring until July; no white clover. I secured about 12 pounds of honey per colony from buckbrush and fall flowers. J. R. Marye.

Bunceton, Mo., Oct. 3.

Fair Crop in Montana

We have had a fair crop of honey here this season I have taken off 150 cases from 23 colonies, spring count, and increased to 46, besides 10 cases of sections that the bees didn't cap over. This is a good bee country, no disease as yet The bees are still gathering nectar from alfalfa and sweet clover.

A. P. Sherman.

Forsyth, Mont., Sept. 28.

Out-Apiary Bee Cellar With Bee House Over It

I am building another out-apiary bee cellar with bee house over it. I can no longer afford to be without the cellar during the summer as well as in winter. It saves me hired help, time, and honey pump. I have only gotten 65 to 75 pounds of honey per colony so far, but many hives now have 20 Langstroth combs almost full of honey to remove from above queen-excluders.

Warm weather with plenty of rain. Clover prospects for 1915 *fine*. N. E. France,
State Inspector of Apiaries.

Platteville, Wis., Oct. 3.

Sickness of M. E. Darby.—The congenial Missouri State Inspector, M. E. Darby, has been sick with typhoid fever for upwards of two months and is just recovering. The good wishes of both Editor and subscribers go to him for a prompt convalescence.

Chicago - Northwestern Beekeepers' Convention.—The 18th annual meeting of the Chicago-Northwestern Beekeepers' Aassociation will be held at the Great Northern Hotel, Chicago, Thursday and Friday, Dec. 17 and 18. An extensive program has been arranged, and as several large beekeepers, such as N. E. France, E. S. Miller and others have signified their intention of being present, a good meeting is assured. The program follows:

Thursday Dec. 17.

9:00 A.M.—Social hour.

10:00 A.M —President's Address—C. F. Kannenberg.

10:30 A.M.—Reading of minutes and report of Secretary-Treasurer.

11:00 A.M.—American Beekeeping—Past and Future—L. A. Aspinwall.

Crop reports.

Afternoon Session.

1:00 P.M.—Shipping Bees North and South—H. C. Ahlers.

2:00 P.M.—Country Wide Advertising to Increase the Sale of Honey—G. E Bacon.

3.00 P.M —Report of Delegate to National Convention—E. J. Baxter.

4:00 P.M.—Bee Cellar—E. S. Miller.

Question Box.

Thursday Evening Session.

Sweet Clover—Prof. J. G. Mosier—University of Illinois.

Friday, Dec. 18.

9:00 A.M.—Social hour.

10:00 A.M.—The Price of Sugar and the Honey Market—F. C. Pellett.

11:00 A M.—The Foulbrood Problem—N. E. France.

Afternoon Session.

1;00 P.M.—Relation of Bees to Horticulture—Prof. F. E. Millen, Assistant Professor of Agriculture.

2:30 P.M.—Brood-Rearing for Crop Results—E. L. Hofman.

3;20 P.M —Comb Honey—Preparing for the Crop—A. L. Kildow.

4:00 P M.—Beekeeping as a Business—E. H. Bruner.

Bulk Comb Honey for Sale—We have some very excellent horsemint honey, light amber in color, put up in attractive styles. If you have never tried bulk comb either yourself or to sell, send for a trial shipment. You will be well pleased. Our prices are as follows, f. o b. Goliad:

6 lb. cans (10 to a case) 10 cents a pound
10 lb cans (6 to a case) 10 " "
60 lb. cans (2 to a case) 9 " "

Freight rate to Illinois and common points in the same general territory, 1.03 per hundred pounds. We also handle pecans.

Goliad Bee & Honey Co., Goliad, Tex.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any
Wm. S. Barnett, Barnetts, Virginia.

PURE TUNISIAN QUEENS, tested, $1.00; 2-lb. bees with tested queen, $4.00. Safe arrival guaranteed. Lenoel, Nabeul, Tunis.

GOLDEN all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
Robert Inghram, Sycamore, Pa.

UNTESTED Queens, 75c each; $7.50 per doz. Nuclei, $1.25 per frame. Bees, $1.50 per pound. Full colonies, 8-frame, $6.50; 10-frame, $7.50.
Stover Apiaries, Mayhew, Miss.

QUEENS, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

WE WILL be in the field with good Italian Queens in June for $1.00 each; 6 for $5.00. Two-frame nuclei in June without queen, $2.50; with queen, $1.00 extra.
D. J Blocher, Pearl City, Ill.

PHELPS' Golden Italian Bees are hustlers.

PURE Golden Queens, the best that twelve years can produce. Untested, $1.50 each. Select tested, $3.00 each. Breeders, $5.00 to $50. Send for booklet on "Bees and Diseases." Geo. M. Steele,
30 South 40th St., Philadelphia, Penna.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

HONEY AND BEESWAX

WANTED—No. 1 white comb honey.
Fred Peterson, Alden, Iowa.

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

NULL'S FAMOUS MELILOTUS HONEY, 10 lb. pail prepaid any express office east of the Rocky Mts., $1.50. Null Co., Demopolis, Ala.

COMB HONEY—No. 1 Choice and No. 2 Colorado Standard Grades. Carload just in. State quantity wanted.
Dadant & Sons, Hamilton, Ill.

CALIFORNIA ORANGE BLOSSOM HONEY, extra fancy, at 9c. Safe arrival guaranteed Sample free. James McKee, Riverside, Calif.

FOR SALE—60,000 pounds light extracted honey, well ripened, mild flavor; two 60-lb. cans to case; 7½c per pound; 10-case lots, 7c.
H. G. Quirin, Bellevue, Ohio.

LIGHT AMBER Honey 9 cts. a lb. California sage honey, 10 cts. a lb.; two 60-lb. cans to a case. Sample of either, 10 cts.
I. J. Stringham, 105 Park Place, New York.

EXTRACTED HONEY—Best Water White and nice Amber Alfalfa in 60-lb., 30-lb., and smaller tins. State quantity you want. Special prices on ton lots or over. Several carloads just in. Dadant & Sons, Hamilton, Ill.

THE BEEKEEPERS' REVIEW is now owned and published by the honey producers themselves It is *the* paper *all* honey producers should support. Eight months' trial subscription, beginning with the May number, for only 50c. Sample copy free. Address, The Beekeepers' Review, Northstar, Mich.

FOR SALE—Raspberry, Basswoood No 1 white comb, $3.00 per case; fancy, $3.25; 24 Danz, sec. to case, 9 cases to carrier. Extracted, 120-lb. cases at 9 cts
Wiley A. Latshaw, Clarion, Mich.

SUPPLIES.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

BETTER HIVES FOR LESS MONEY—Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

THE A. I. ROOT COMPANY'S Canadian House. Dadant's Foundation. Poultry, Supplies, Seeds. Write for catalog.
The Chas. E. Hopper Co.,
185 Wright Ave., Toronto, Ont.

MISCELLANEOUS

ORIGINAL and unique honey advertising post cards (photos). Write Dr. Bonney, Buck Grove, Iowa, for samples.

YOU have been thinking for some time you would like to become a National Beekeepers' Association member. Now is your time; a year's dues to the National and eight months' subscription to our own paper, the Beekeepers' Review, beginning with the May number, both for only a dollar. Address with remittance, The Beekeepers' Review, Northstar, Mich.

THE DEMAND for 1914 subscriptions has been beyond expectations, and we find ourselves short of January, 1914, numbers. We will pay 10 cents each for the first twelve of these sent in to us good shape, or will credit you two months on your present subscription, American Bee Journal,
Hamilton, Ill.

POULTRY

FOR SALE—Single Comb Buff Orpington eggs for hatching, pure bloods; $1.00 per 15 or $5.00 per hundred. Satisfaction Guaranteed.
W. H. Payne, Hamilton, Ill.

FOR SALE

FOR SALE—1000 colonies of bees in 10 apiaries. Located in Imperial Valley where crop failure is unknown. Owner started without capital less than five years ago. Is now retiring from active business. Profits for five years have averaged more than 100 percent annually.
J. Edgar Ross, Brawley, Calif.

WANTED

WANTED—From 4000 lbs to carload of comb and extracted. Iowa, Wisconsin or Michigan honey. Quote me prices.
W. H. Hyde, New Canton, Ill.

SITUATIONS.

HELP WANTED We desire an experienced apiarist to run from one to three hundred colonies of bees for three years on shares for one-half crop and increase. State age, nationality, and former experience in first letter Spencer Apiaries Co., Nordhoff, Cal.

P-O-R-T-E-R

TRADE MARK PORTER REGISTERED

BEE-ESCAPE

For getting bees out of the super automatically before removal from the hive.

It is a combination of speed, safety and satisfaction that saves honey, time and money for the user. As a labor-saving device it has no superior. Avoids "breaking the back" in shaking heavy supers to get the bees out.

Leading beekeepers the world over use these Escapes and give them their unqualified endorsement.

Single Escape. Each, 15c; per doz., $1.65

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Double Escape. Each, 20c; per doz., $2.25

All Porter Escapes fit the same size opening in Escape-board.

For sale everywhere by dealers in Beekeepers' Supplies.

If you have no dealer, order from factory, with full instructions.

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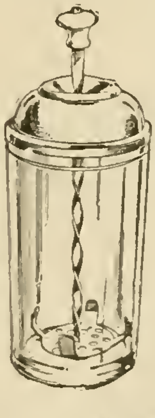
A NICE GIFT FOR WIFE, MOTHER, SISTER



We are fortunate in being able to offer to our readers a real practical egg beater, cream whipper, etc. It is called the "Roberts Lightning Mixer." From the experience or users here, it well deserves its name. It is easy to Clean, Hard to damage, and a Pleasure to Work.

The spiral perforated dasher whirling in every direction, aerates, stirs and lightens, and at the same time it completely and thoroughly mixes every particle.

We recommend it to our readers as being well worth the money.

Sold in pint size. We can send them, postpaid, from the factory in Massachusetts for 50 cents.

Address all orders to

AMERICAN BEE JOURNAL, Hamilton, Ill.

HONEY AND BEESWAX

CHICAGO, Oct. 17.—The firm feeling noted last month in comb honey continues, and 17c per pound is obtainable for white clover and linden comb where the wood attached to the comb is allowed for. There is no surplus of off grades, and the market is taking practically all that comes with prices ranging from 1@3c per pound less according to kind and condition. This includes the amber grades as well as buckwheat. Extracted white grades of clover and linden, including water-white sage, sells at from 9@10c with other white honey very slow of sale at a range of from 7@8c per pound. Ambers range from 6@8c per pound, according to what gathered from the quality thereof Beeswax is steady at from 33@35c.
R. A. BURNETT & CO.

INDIANAPOLIS, Oct. 17.—The demand for extracted honey is good. The demand for comb is hardly satisfactory. We quote choice comb $4 00 per case; white clover and sage extracted at 9½@10½c. We are offering for beeswax 31c cash, 33c in trade.
WALTER S POUDER.

LOS ANGELES, Oct. 17—The honey and beeswax market is considerably easier than it was at last writing. Honey can be bought in carload lots f. o. b. common shipping point about as as follows: Alfalfa, light amber, 4½@4¾c; sage, light amber, 4¾@5c; sage, water whiie, 7¼@7½c. Choice yellow beeswax, 31c per pound.

These are the prices at which shippers like ourselves are willing to sell at the present moment. The supply is still largely in excess of the demand, and business is rather quiet. HAMILTON & MENDERSON.

KANSAS CITY, MO., Oct. 15.—The supply of both comb and extracted honey is liberal and the demand fair. We quote as follows: No. 1 white comb, 24 section cases, $3 10 to $3.25; No. 2, $2.75 to $3.00. No. 1 amber, $3.00; No 2, $2.50 to $2.75, Chunk honey, 60 lb cans, 10c White extracted, 8@8½c; amber, 7@7½c; dark, 5c. Beeswax, 25@28c.
C. C. CLEMONS PRODUCE COMPANY.

CINCINNATI, Oct. 18—There is very littl. demand for honey at the present time However, we are selling our comb honey from $3.00 to $4.00 per case, according to the quality and who is buying it Our extracted honey, for the best white 7½@10c in crates of 2-60 pound cans; for amber extracted from 5@7½c. For choice bright yellow beeswax we are paying 30c a pound delivered here. THE FRED W. MUTH CO.

BOSTON, Oct. 17.—No. 1 and fancy new white comb, 16@17c per pound. Fancy white extracted in 60-pound cans, 11c per pound Beeswax, 30c. BLAKE.-LEE COMPANY.

DENVER, Oct. 15.—We have no more old stock of comb honey to offer. We are selling extracted in a jobbing way at the following prices: White extracted, 8c; light amber, 7c. We pay 32c per pound in cash and 43c in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

NEW YORK, Oct. 17.—Owing to the short crop in comb honey in the eastern States, receipts thus far have been rather light, but on the other hand the demand is not up to former years Some far western honey is coming into our market and is selling at around 14@16c, according to quality, dark and lower grades at from 10@12c.

There is not much extracted honey in white clover or linden, but quantities of California and western are arriving to offset the shortage here. We quote: White, 8½@9c, light amber, 7@8c; lowei grades, 6@7c, all according to quality. Large quantities of West India honey are arriving right along, and take the place of domestic honey in a good many instances on account of the low price. We would advise our southern shippers not to make any shipments at all until they correspond with us first.

Beeswax has been declining right along, and we quote domestic at from 28@30c per pound for choice quality, and foreign, principally West India at from 25@27c per pound.
HILDRETH & SEGELKEN.

STEVENS
Repeating Shotguns
The Stevens Hammerless
costs no more than some hammer guns.
It has the celebrated
STEVENS RECOIL UNLOCK
providing safety against
"hang-fires."
HAMMERLESS
SOLID BREECH
Easy Take-Down
12 or 20 Gauge
EVERY GUN
GUARANTEED
J. Stevens Arms & Tool Co.
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FREEMAN'S FARMER North Yakima, Wash.
Successor to Northwest Farm and Home
69 YEARS OLD
If you want a descriptive and agricultural magazine, it will inform you all about the methods in the Pacific Northwest
Send One dollar during October, November or December, and the magazine will be sent for one year. Cut rate of one-half price now on

WHITE SWEET CLOVER SEED
10,000 pounds unhulled at 12c per pound. Hulled, cleaned, 20c per pound f. o. b Cowley. Sacks extra at 25c. Immediate shipment. B. F. Smith, Cowley, Wyo.

BEES WANTED—Hives must have honey for winter—$1.20 to $2 00 each State full particulars. Friedel, Grand and Barnett Sts. Rahway, N. J.

A Good Italian Queen

Gentlemen :—I wish to let you know that I received the queens the day before your letter. They were very prompt and much earlier than expected. They arrived all right, and were successfully introduced, but under the most trying circumstances I ever saw. The bees were extremely cross, so that it was almost impossible to work with them. I think it due mostly to very little nectar coming in; besides the brood being nearly all hatched, they were queenless quite a while. I examined them a few days ago and found they were all accepted.

Enclosed you will find a kodak view of myself and seven cases of honey produced (168 sections) by one of your Italian queens which I got the year before. Several of the other Italian queens averaged over 100 pounds per colony, which, I think, pretty good for such a dry year as we had last year. Very little honey will be produced in this locality, but the young clover plants are abundant, and the outlook is good for next year. D. H. HOFFMAN.
Walnut, Ill., June 22.

BOOKS FOR BEE-KEEPERS
FOR SALE BY
AMERICAN BEE JOURNAL,
HAMILTON, ILLINOIS.

First Lessons in Bee-Keeping, by Thos. G. Newman, revised by C. P. Dadant.—Intended mainly for beginners. Nearly 200 pages, and over 150 pictures. Bound in strong paper cover, showing bee-brood in all stages of development from the newly-laid egg. This book contains the foundation principles of bee-keeping, as its name indicates. Price, postpaid, 50 cts.; or free with the American Bee Journal one full year if paid strictly in advance—by either new or renewal subscription at $1.00.

Fifty Years Among the Bees, by Dr. C. C. Miller.—340 pages, bound in cloth, and illustrated with 112 half-tone pictures taken by Dr. Miller himself. It is a good, live story of successful bee-keeping by a master of the subject, and shows with clearness just how Dr. Miller works with bees and produces tons of honey. Price, $1.00, postpaid; or with the American Bee Journal a year, $1.80; or given FREE as a premium for sending 3 New subscriptions at $1.00 each.

Scientific Queen-Rearing, as Practically Applied, by G. M. Doolittle.—It tells how the very best Queen-Bees are reared in Nature's Way. A good authority says; "It is practically the only comprehensive book on queen-rearing now in print. It is looked upon by many as the foundation of the modern methods of rearing queens wholesale." Price, bound in cloth, 75 cts., postpaid; or with the American Bee Journal a year—both for $1.50. The same book bound in leatherette, 50 cts., postpaid; or free with the American Bee Journal one full year if paid in advance strictly, by either new or renewal subscription at $1.00.

Our Special Big Four Magazine Offer!

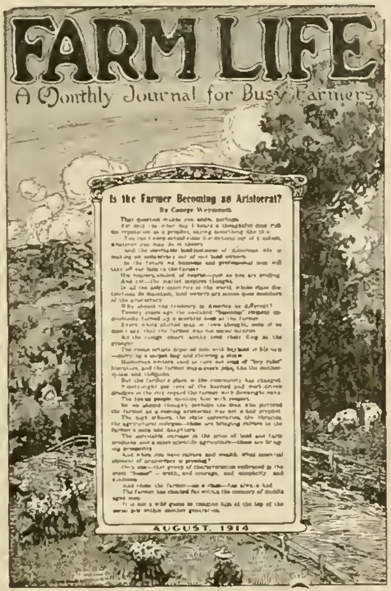
Woman's World–Household–People's Popular Monthly–Farm Life

A special arrangement secured by the American Bee Journal, enables us to offer to our subscribers for a limited time only the American Bee Journal for one year with a full year's subscription to all four of the above high-grade publications, at the special price of **$1.30.**

Four Big Magazines and American Bee Journal All Five for $1.30

WOMAN'S WORLD

WOMAN'S WORLD has more subscribers than any other magazine published, over two million a month. Its articles, its stories, its illustrations, are the best that money can buy. It is a magazine to be compared with any home magazine in the country, regardless of price, without fear of contradiction of any claims we make for it. Its stories are by authors known the world over.


FARM LIFE
A Monthly Journal for Busy Farmers
Is the Farmer Becoming an Aristocrat?
AUGUST, 1914

FARM LIFE is a publication adapted to the everyday life of the farm folks brimfull of things that help to make the farm life more cheerful and homelike. Special articles by authorities on all subjects of interest to the up-to-date farmer.

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PEOPLE'S POPULAR MONTHLY is one of the greatest popular fiction and home magazines published. Contains complete stories each issue.

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THE HOUSEHOLD—A favorite magazine in a million homes Every issue has many interesting features.

This offer supplies you with a Magazine of the best quality, giving you a year's supply of good literature at a saving of one-half cost

This is the **best** and biggest combination clubbing offer ever presented to the public The pubisher of the American Bee Journal is glad to announce to his subscribers the completion of this splendid arrangement, whereby he can offer such an excellent list of publications in connection with a year's subscription to the American Bee Journal at the remarkable price of $1.30 for all five. This offer is good for a **short** time only, and may be increased at any time.

AMERICAN BEE JOURNAL, Hamilton, Illinois

THE CHRISTMAS THOUGHT

Ideas on Christmas giving are rapidly changing among the sensible. Those who think as they give are looking for a year-around service as the important thing.

In a week of shopping, with all its strain, you will not find a better gift than a year's subscription to The Youth's Companion. It offers its service, its clean entertainment, its fine suggestiveness week after week; and the end of the year, which finds many a gift in the attic, dust-covered and forgotten, brings The Companion again with all the charm of last Christmastide.

No American monthly at any price offers the same amount of reading, and none can offer better quality. Less than four cents a week provides this best of Christmas gifts—$2.00 a year. If you subscribe now, all the remaining issues of the year will be sent free, and The Companion Home Calendar. A copy of the Calendar is also sent to those who make a gift subscription. Send for sample copies, and the Forecast for 1915.

THE YOUTH'S COMPANION,

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New Subscriptions Received at this Office.

1915 MODEL **22 Cal. HUNTING RIFLE Free**

A REAL GUN. Take-Down pattern, with latest improvements, walnut stock and grip. Shoots accurately 22 long or short cartridges. Handsome, durable. **SEND NO MONEY** only your name and address for my easy plan of securing this fine rifle **Absolutely Free** express prepaid. Write today. D. W. BEACH, Box 80 · Spencer, Ind.

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LET US FIGURE WITH YOU

We know we can satisfy you on quality. Write for catalog.

C. C. CLEMONS BEE-SUPPLY CO.
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HONEY CANS

All Styles—All Sizes

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—OF—

BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
"Pearce's Method of Beekeeping" (50c)	.30
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.30
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	$3.60

Or *all* the above in one order to one address *for only $3.00.* (The retail price of the bunch is $4.95.) Address,

GEORGE W. YORK, SANDPOINT, IDAHO

We Make a Specialty of Manufacturing

SECTIONS

They are the Finest in the Land— None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby. St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

MR. BEEKEEPER : — Send us a list of goods you want for our fall discount. We can save you money. Also prices on our best roofing. This is the time to buy. Catalog free.

H. S. DUBY & SON, St. Anne, Illinois

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WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

W. H. Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

FLORIDA **For 10 Cents**

Two months trial subscription to Florida's only Agricultural weekly. Tells facts. Answers questions about soils and crops Address FLORIDA GROWER, Box A, Tampa, Florida

CASH PAID FOR HONEY

We are constantly in receipt of inquiries for prices on honey. When you are ready to market your honey, you will find an army of purchasers ready to buy it by advertising your product in the Woman's National Weekly, which reaches 200,000 homes every week. Write for our Special Classified rate and free sample copy. **Dept. O C, Woman's National Weekly, University City, St Louis.**

MARSHFIELD GOODS

BEE KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., **Marshfield, Wis.**

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MFG. CO.
Manufacturers
OF THE
"NONE BETTER"
BEE-KEEPERS' SUPPLIES

Perfect sections from young, white, basswood. White Pine Hives and Supers, Excellent Shipping - Cases, Brood-Frames, Separators, etc.
We invite your correspondence.

Guarantee — All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

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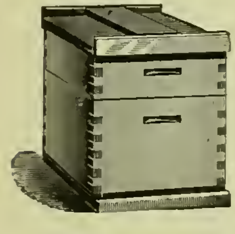
New London, Wis.



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Pay You to Buy Bee Supplies Now
30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.
LEAHY MFG. CO., 90 Sixth St., Higginsville, Missouri

WANTED
Honey!
Extracted and Comb
—ALSO—
Beeswax
Will pay full market value. Write us when you have any to dispose of
Hildreth & Segelken
265-267 Greenwich St., New York, N. Y.

Dittmer's Foundation

Is the **Comb Foundation** made to **suit the Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

Ask for more information; also prices and **FULL DISCOUNT** on all Bee-Supplies.

Gus Dittmer Company
Augusta, Wisconsin

BEEKEEPERS' SUPPLIES
Such as Winter-cases, Sections, brood-frames of every description, Section holders, Comb Foundation, Supers, Hive-bodies, Smokers, etc.
Get my prices before placing your orders.
R. H. SCHMIDT
R.3, Box 209, Sheboygan, Wis.

EASTERN
Beekeepers
If you are in need of shipping cases, cartons, honey jars, or anything in the supply line, let us quote you on them. No. 25 jars with bronze cap, $1.60 a gross. Five gross, $1.30 a gross. Untested Italians queens, $1.00.
I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-Page Catalog

Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

C. H. W. WEBER & CO.

CINCINNATI, 2146 Central Avenue, OHIO

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

A LETTER IN "JAPANESE-ENGLISH" AS IT CAME TO US

MINO, JAPAN, AUG. 31, 1913.

DADANT & SONS, Hamilton, Ill., U. S. A.

Gentlemen:—Widely is known the matchlessly excellent quality of your foundation. This can amply be testified by the various experiments I have made in the course of this year, and also by the many testimonials of those who having been supplied with the same by my apiary, have already made experiments upon it.

It is indeed an Ideal Foundation, and this cannot be blamed of an exaggeration when I take into consideration the astounding rapidity with which bee combs are built out of it.

Hoping your further success, I remain, Sirs,
Truly Yours, K. MIDZUNO.

Comb Foundation, Bee-Supplies, Honey, Beeswax, Sweet-Clover Seed, etc. Old Combs, Cappings or Slumgum rendered into Beeswax on shares and Beeswax worked into Foundation

DADANT & SONS,
HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

Mass Agl College apr 19
Library Amherst, Mass

DECEMBER 1914

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec14" on your label shows that it is paid to the end of December, 1914.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 5 lines accepted.

DISCOUNTS:
3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 23d of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD

Dominion of Canada, Department of Agriculture, Central Experimental Farm.
OTTAWA, Sept. 5, 1913
Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.
(Signed) C Gord n Hewitt,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.
STILLWATER, Oct 7, 1913.
Your queen arrived in first class condition, and introduced her without any difficulty.
(Signed) PROF. E. C. SANBORN,
State Entomologist.

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n
ANTHONY BIAGGI,
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

Bee-Supplies

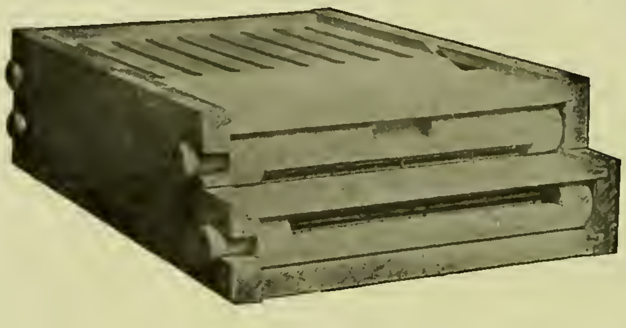
LET US FIGURE WITH YOU

We know we can satisfy you on quality. Write for catalog.

C.C.CLEMONS BEE-SUPPLY CO.
Dept. S., Kansas City, Mo

FEATURES OF ADVANTAGE OF THE

ROLLER ENTRANCE BOTTOM BOARD



1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.
2. It controls the mating of the queen so that mismating is prevented.
3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position
4. It sifts automatically undesirable drones out of the hive, and cages them in the drone trap.
5. It permits ample ventilation at the height of the honey-flow.
6. It can be instantly closed when moving bees in and out of cellars or from one yard to another.
7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.
8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.
9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.
10. It is adjustable to make a shallow bottom for summer and a deep one for winter.

It contains many other valuable features which will be apparent to any beekeeper upon investigation, and if it is once tried it will always be used

8-frame size, $2.00; 10-frame size, $2.50. Italian Queens, Breeders, $10 to $25.

Nothing sold under $10.

CHAS. G. SCHAMU
INVENTOR AND MANUFACTURER Box 48, LIVERPOOL, NEW YORK

PERFECTION IN WAX RENDERING

Has been reached by our process. Ship us **comb and cappings,** and secure highest returns. Write for prices and full information.

THE FRED W. MUTH COMPANY
"The Busy Bee Men"
204 Walnut Street Cincinnati, Ohio
Comb and Extracted Honey Wanted

SUPPLY YOUR HONEY CUSTOMERS
WITH
Fine White Alfalfa
CAN SUPPLY ANY QUANTITY
Extracted honey packed in 60, 10, 5, and 2½ lb. cans
Send for sample and prices today
DADANT & SONS, Hamilton, Ill.

CEDAR WOOD

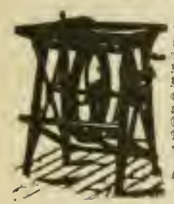
Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.

J. C. Frohliger, Berkeley, Calif.
Greater San Francisco

BARNES' Foot-Power Machinery



Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
995 Ruby St., Rockford, Ill.

Try My Famous Queens

From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

Bred in Separate Yards

Untested, one, 75c; 6, $4.25; 12, $7.50; 25 14.25; 100, $50. Tested, one, $1.50; six, $8.00; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two-frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

NOTICE IS HEREBY GIVEN

that the partnership heretofore carried on by the "CHAS. E. HOPPER COMPANY" as dealers in beekeepers' supplies, etc., has been this day dissolved by mutual consent. All debts owing to the said partnership are to be paid to The Root-Canadian House at 183 Wright Avenue, Toronto, Ont., and all claims against the said partnership are to be presented to the said Root-Canadian House, by whom the same may be settled.

DATED at Toronto this 20th day of November, 1914.

Witness:—
CHAS. E. HOPPER CO.
JOHN A. PATERSON.

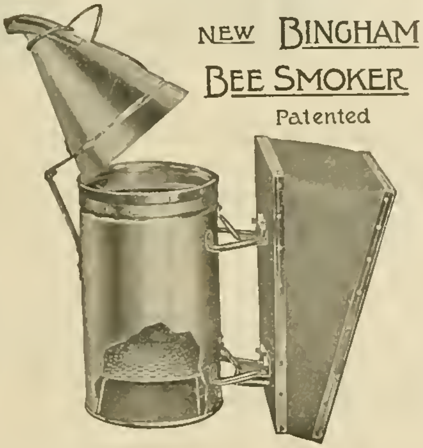
P. S.—The business will be continued as before by The Root-Canadian House, 183 Wright Ave., Toronto, Ont.

ARE YOU GOING TO BUY LAND?

If so, get a copy of our Journal first. It has lands advertised in it from nearly every State in the Union, so that you can find just what you want. It reaches 67,000 readers each issue. Advertising rates 2c per word. Send 20c for six months' trial subscription. It will be stopped at the end of six months.

Farm and Real Estate Journal
Traer, Iowa

Bingham Bee Smoker



Nearly Forty Years On the Market

The original bee smoker was invented and patented by Mr. T. F. Bingham in 1878, 1882, 1892 and 1903. The Bingham Smoker is up to date, and the standard in this and many foreign countries. It has recently been improved, and is the all-important tool of the most extensive honey producers of the world. No other invention in apiculture has been so important, as little could be accomplished without the bee smoker. For sale direct or at your dealers. Postage extra.

Smoke Engine	4	inch stove,	Weight	1¾	pounds,	$1.25
Doctor	3½	"	"	1⅝	"	.85
Conqueror	3	"	"	1½	"	.75
Little Wonder	2½	"	"	1	"	.50

Two Largest Sizes With Hinged Cover

A. G. WOODMAN COMPANY
Grand Rapids, Michigan

INCREASE THE YIELD OF YOUR FARM

The European war is doubling the demand for American farm products. We can increase our acreage but this will not meet the demand—we must increase our yields per acre. We must do better farming, not only in the East and Middle West, but in the great grain raising territory west of the Missouri River.

Everybody knows that by following the Campbell System of Soil Culture, crop yields have been doubled in every State of the Union from New York to California. Why not learn what the principles of the Campbell System are and adopt them? You can get all this and a thorough agricultural education without leaving home by taking a course in the

Campbell Correspondence School of Soil Culture

You can have your choice of eight courses, Soil Tillage, Soil Improvement, Small Farming, Horticulture, Irrigation, Dry Farming, Farm Engineering and Animal Husbandry, all for a nominal tuition fee, no board to pay, no books to buy, everything furnished, and you can use your spare time while still running your farm or holding your job.

We cannot tell you all about these courses, the faculty and the free bureau of advice in this ad, but we will be glad to send you full information at any time. Write and ask for our free catalog No. 3, and a sample copy of the Scientific Farmer.

Campbell Scientific Soil Culture Company Lincoln, Nebraska

The Beekeepers' Review Clubbing List for 1915

In the following combinations we offer periodicals of sterling worth. Remember, you are not receiving some premium of questionable value, but a saving of dollars and cents on your 1915 reading matter. The combination offers with the reduction we are able to allow are as follows:

The Review	$1.00	All five
Woman's World	.50	$1.25
Household Magazine	.50	the bargain
People's Popular Monthly	.50	of the
Farm Life	.50	season
Total value	$3.00	

Here is another good one:

The Review	$1.00	Both for
The Youth's Companion	2.00	only $2.25

The following are of sterling cash value:

The Review	$1.00	Both for
American Bee Journal	1.00	only $1.50

Save $1.30 on this combination.

The Review	$1.00	$4.00 worth
Everybody's Magazine	1.50	for only
The Delineator	1.50	$2.70

Another is:

The Review	$1.00	Both for
Reliable Poultry Journal	.50	$1.25

The Review	$1.00	Both for
Gleanings in Bee Culture	1.00	only $1.50

The Review	$1.00	$3.00 each
Gleanings in Bee Culture	1.00	value for
American Bee Journal	1.00	only $2.00

Special offer to new subscribers: To those ordering early before the supply is exhausted, we will send in connection with any of the above combinations, the last eight months of the Review for 1914, which contains the National convention report with many valuable papers read at said convention, besides other articles of value not appearing in other papers. Address, with remittance,

THE BEEKEEPERS' REVIEW, Northstar, Mich.

4 Percent December Discount on

"Falcon" Bee Supplies

How much percent interest do you get in the bank—wouldn't it pay to invest in bee supplies now and save the 4 percent—you'll have your money tied up only a few months?

"**Falcon**" foundation and supplies have the quality, and with the superior workmanship back of them make them perfect.

If you have never used "**Falcon**" supplies, send a list of your 1915 requirements and let us quote. Some of the old veteran beekeepers who purchased "**Falcon**" hives when we first started manufacturing supplies about 40 years ago, tell us that the hives are in good shape yet. In some cases they tell us the hives have not been painted for about 25 years, which goes to show that "**Falcon**" supplies have the QUALITY.

Remember we are the manufacturers of that sweet pure "**Falcon**" foundation. We have OUR OWN plant and OUR OWN process for making foundation. Samples will be gladly sent for your inspection.

Red Catalog postpaid **"Simplified Beekeeping," postpaid**

Dealers Everywhere

W. T. FALCONER MFG. CO., - FALCONER, N. Y.

Where the good bee hives come from

HONEY LABELS

Owing to the many enquiries we have had for Honey Labels, we have put in a line of these for the convenience of our readers.

Send for catalog, giving samples of labels with postpaid prices. We also list **Envelopes and printed Letter Heads.**

American Bee Journal, Hamilton, Illinois.

PONTIAC ENGRAVING CO
ARTISTS
ENGRAVERS-ELECTROTYPERS
542 550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

Please mention Am. Bee Journal when writing.

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years. In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority.

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in *honey*-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in attics, or roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL—Breeding.—Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, $1.00, will bring you.

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Illustration from Biggle Bee Book

The Farm Journal is cut to fit all subscribers, not only those of one section. It will be found equally valuable in Maine, Kansas, Pennsylvania, Oregon, or Alabama.

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This is one of the standard books on bees. It tells in a simple, concise manner just how to keep bees. It was originally written by Rev. L. L. Langstroth, the inventor of the movable-frame hive in 1851. The book has been brought right down to date by those expert bee-keepers—Dadant & Sons—than whom there are no better nor more practical bee-keepers in this or any other country. The book contains nearly 600 pages. It is fully illustrated, and bound in cloth. Every topic is clearly and thoroughly explained, so that by following its instructions no one should fail to be successful with bees. Price, postpaid, $1.20.

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AMERICAN BEE JOURNAL

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., DECEMBER, 1914

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EDITORIAL COMMENTS

Bee Meetings

The following meetings are already scheduled for the future as indicated. Secretaries are urged to write, giving date of meetings so that they may appear in these columns:

New York State Association of Beekeepers, Syracuse, Dec. 1 and 2.
Minnesota State meeting, Minneapolis, Dec. 2 and 3.
Kansas State meeting Dec. 4 and 5, Topeka, Kan.
Missouri State meeting, St. Joseph, Dec. 7 and 8.
Michigan Beekeepers' Association, Lansing, Dec. 9 and 10.
Akron, N. Y., meeting, Akron, Dec. 15.
Chicago-Northwestern, Great Northern Hotel, Jackson Blvd. and Dearborn St., Chicago, Dec. 17 and 18.
Washington State, North Yakima, Jan. 6 and 7, 1915.
National Beekeepers' Association, February (date to be decided), Denver, Colo.

Smoke Method of Queen Introduction

The reader will find in this number several articles on the "smoke method" of queen introduction. As this subject has been thoroughly discussed already, we will close it until a season's work has given further chances of experiment.

Modern Beekeeping

It is somewhat surprising for the American beekeeper to read commendation of ancient methods in some of the foreign bee publications. The fixed comb hive, *gum* in America, *skep* in the British Isles, *panier* or *bournac* in France, is a "back number," used only by the man who does not read, who knows nothing about positive bee culture. That some sort of honey crop is harvested with these old systems, does not prove them good. There are still millions of bushels of wheat harvested with the ancient sickle and cradle. Profitable beekeeping depends upon modern methods, upon the entire control of the hive, the brood, the queen, the surplus, by the apiarist. We are quite sure that not a dozen of our subscribers are supporters of the "skep system" for honey production. The fixed comb-honey producers are in the uninformed class. Their product is inferior because not put upon the market in best shape and their numbers are constantly decreasing. In the spots where beekeeping thrives without modern methods, greater crops will sooner or later be made by modern ways. The transformation is slowly but surely taking place.

Dr. Miller on Superseding

On page 305, September number, J. L. Byer says: "How I wish my bees were as sensible as Dr. Miller's, page 279. He says: 'The bees usually requeen in good time, if the matter is left to them.' And for that reason he does not do away with 2-year-old queens, if they appear to be making good. Sorry to say that I do not practice systematic requeening, *but* in my case quite a large percentage of the colonies fail to replace 2-year-olds before they fail, and often act this way just at the close of fruit bloom, and this means a set back for the clover harvest."

To this Editor Dadant replies in a foot-note, saying: "The answer criticised by Mr. Byer is not by Dr. Miller, but by the junior editor, as may be seen by the initials, C. P. D. at the foot of the reply. The question had been asked of me. Dr. Miller might have replied in a way more suited to Mr. Byer's views."

Prudence might counsel that it would be well for me to keep entirely silent, as it is no funeral of mine, and there is not much chance to reconcile the two engaged in the controversy, since their experiences are unlike, yet the matter is of so great importance that it seems worth while to talk about it, and of my own experience connected therewith.

One cannot help asking why it is that in one case the bees can be safely trusted to requeen in good time, and not in the other. And why should it be that some leave the matter of requeening entirely to the bees, while others advocate that no queen should be allowed to live even as long as two years? I leave to others to answer whether it may be due to the difference in localities, in management, or in bees.

In referring to my own experience, allow me to go "by the book," that is, my record book of the bees' doings. I find that in the year 1913 3 colonies of the 91 changed their queens in May. In 1914 there were 3 of the 84. Bunching the two years it makes 6 in 175, or about one in 30. Of course, there is the possibility, if not the probability, that in one or more cases the queen may have been accidentally killed. In all other cases, I think, except one, there was no superseding until well along in July or later; so late as to make no practical interference with the honey crop.

It may be that in general a queen of the previous year does better than an older one; but I have had many cases of extra work from queens more than 2 years old. In the best year I ever had, 1913, the queen of my eleventh best colony was one which was born late in July, 1910, and in her fourth year before the season closed.

So the behavior of my bees is such that I do not believe I would gain enough, by taking the requeening into my own hands, to pay for the trouble. Indeed, if I should object at all to having attributed to me the saying that the bees usually requeen in good time, if the matter is left to them, my objection would be that it states the case rather mildly.

I would not have it understood that I never take into my own hands the matter of requeening. I always do when I can conveniently replace a queen with a better one; but no queen is ever replaced by me merely because she has arrived at a certain age.

Even if I believed that by replacing a queen on account of old age I should get from that particular colony enough more honey to pay for the trouble of requeening, there are two reasons why I should not want to do so.

First, it is the belief of some good authorities that longevity is an important factor, and if each queen should be killed upon arriving at a certain age, it certainly would not tend to increase longevity.

Second, if there is one thing of more importance than another in management to get the biggest yield of honey, I believe it is the constant improvement of stock by breeding from the best. Practically no queen can ever make a record in the same season in which she is born. For example, if she is born any time in 1914, she will not be born early enough to have the crop of 1914 credited to her. It is to be credited chiefly to her predecessor. She will make her record in 1915, since all the workers of that season are her progeny. Then in 1916 she can be used as a breeder. Still better will it be if she is left to make the crop of 1916, to be used as a breeder in 1917. Of two colonies which give an equal yield in 1915, one may yield better than the other in 1916, and should have the preference. There are other things, such as temper, swarming, and wintering, which it may be well to watch for the second season. Neither will it do to depend upon a single queen. No matter how good her record, accidents may happen and she may be dead before time to rear queens. So a number of those above the average are needed from which to select, and this number should be all the larger because from them our drones are reared, and good drones are just as important as good queens.

I do not say that what is best for me is best for every one, but on the whole I believe it is best for me to leave superseding to the bees themselves, being allowed all the time the privilege to replace a queen with one that I believe better, whenever opportunity offers. I feel that I have some endorsement in this belief in the fact that having followed this policy for many years, in a locality that I do not believe up to the average, I still have crops that are satisfactory. C. C. M.

Eat Honey

In the contributed articles of this number, under the heading of "Glucose Again," Dr. Bonney advises the use of white and red stickers, "EAT HONEY," of the same size as shown in the article.

This idea appealed to us, and we immediately had a cut made to print 64 of these stickers at a time. Dr. Bonney states that he pays 50 cents a thousand for similar stickers. On ordinary lots we can make a price of 35 cents a thousand, postpaid, and could do much better on orders totaling a million or more.

We have some of these stickers on hand already. Send for a supply of five or ten thousand, and help sell more honey.

Melting Wax

Our neat and trim contemporary, the Beekeepers' Gazette (Irish) for October, quotes the Melbourne Times, which says: "When melting wax, add one ounce of sulphuric acid to every gallon of water."

Please, don't! Unless you want to destroy the bee and honey smell of your beeswax, replacing it by a sour, unpleasant odor. An ounce to 30 gallons of water would be ample to do that. Melt your combs, with plenty of rain water, in a tin vessel, over a gentle fire, and you will have wax of nice color, however dark the combs may be. No need of acids.

Neighbors vs. Bees

L'Apicoltore of September quotes a letter from a subscriber whose neighbors threaten him because his bees have annoyed and stung them, and who asks what his legal rights are in the matter. After having supplied the information the editor says: "But the best way is always that of accommodating gentleness, with the observance of reciprocal rights and duties as kind neighbors."

Right! A little kindness and regard for the welfare of others and tolerance for their feelings will save years of war and trouble. We should all be willing to do a little more than our share towards others. War is more easily begun than stopped. A smile and a little honey will carry us farther than a frown and a sting.

The Sitaris

Mr. F. R. Bartsch, of Chicago, calls our attention upon parts of an article in the Independent of Oct. 19, entitled, "Guided Evolution," by W. H. Ward. It says:

"There is a little beetle called the sitaris. It chooses to lay its eggs in the underground passages of a certain sort of a bee. The young larva hatched from the beetle's eggs springs upon the male bee as it emerges from the passage, clings to him, is carried on his nuptial flight, when it passes to the female bee, and remains attached to her until she lays her eggs in the honey. It then leaps on an egg floating on the honey, devours it and develops, rests on the shell and undergoes its first metamorphosis. Now it eats the honey which had been prepared for the grub of the bee and develops into the perfect beetle. Bergson refuses to explain this on Darwinian principles, and is driven to the extraordinary assumption that in a sort of mysticism the invading insect has a sympathetic understanding of the insect it has invaded."

Mr. Bartsch asks which kind of bee is here meant. Can any of our readers reply, and is there any truth in the statement? It certainly has no reference to any of the apis family.

What Determines the Cessation of Laying by Queens?

On Sept. 28 two strong colonies were examined, and neither eggs nor brood were found present. There was no reason for thinking they were exceptional cases. Neither was there any reason for thinking that brood-rearing should close earlier than usual this year, for the flow of nectar, although light, had been continuous. The queens must have ceased laying not later than Sept. 7. Yet in the same apiary were nuclei in which the queens were still laying Sept. 28. That might be accounted for by saying the queens were younger, but is it not possible that the bees in the nuclei did a sort of reasoning in the case, saying: "We are often not strong enough in numbers to stand the rigors of winter, and so must keep up brood-rearing just as late as we can."

At any rate, we do not know any too much on this subject, and it would be interesting, and perhaps useful, to have observations made that would give answers to certain questions. When does the average queen, under ordinary circumstances, cease laying? How much longer, if any, does a young queen continue than an old one? What difference, if any, is made by the strength of the colony? Answers to these and other questions in this connection can perhaps be obtained only by the assembled observations of many.

One thing about the cessation of brood-rearing is perhaps not known as well as it should be. That is that the time when brood-rearing ceases is not always the same as the time when the queen ceases laying. A beekeeper says brood-rearing was still continued upon a certain date, because he found eggs in the hive. But sometimes the queen continues laying although the bees no longer nurse the brood, and only sealed brood, if any, will be found present with the eggs, which seems to indicate that the mere heat in the brood-nest at such times is insufficient to hatch the eggs, and that special effort on the part of the bees is necessary to get up the proper temperature, or else that it is necessary for the nurses to give some special attention to the eggs aside from the matter of temperature. C. C. M.

per should give good evidence that disease does not exist in his apiary. However, when bees are shipped with nothing but candy for food, there would be little danger of transmitting disease. There is very little doubt that disease, especially American foulbrood, is unknowingly spread by the shipment of honey throughout the country. It is this against which the States should protect themselves, by requiring that certificates accompany every shipment, as with queens.

For the middle North, from the 40th to the 42d degree, it is not necessary to have the bees ready very early. From the beginning of April to the middle of May, bees would be more desirable than earlier in the season.

MISCELLANEOUS NEWS ITEMS

Meeting at Lansing.—The Michigan Beekeepers' Association will hold its next annual convention at Lansing, Mich., on Dec. 9 and 10, 1914.

J. E. Morse, *Pres.*

◆

Queen Introduction—The Cage Method.—Since this number contains several articles on "Queen Introduction," it may not be amiss to mention the method employed by S. W. Snyder, of Center Point, Iowa, the Active Secretary of the Iowa State Beekeepers' Association. During the meeting at Ames, there was a short discussion of introducing methods, and he gave his as follows:

"Catch the old queen, place her in the cage intended for the new queen. After a few hours remove her, and put the new queen in the cage. The bees having become accustomed to the presence of their old queen in the cage, more readily accept the new one, as the old queen odor remains behind."

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Bees from the South.—"Some of our beekeepers are interested in finding out whether there is likely to be a demand for bees by the pound in early spring, when your bees in the North first come out of the cellar. At that time, our bees have already had several weeks to build up, and if profitable one could fill up enormously in numbers of bees in the spring.

"If you have had any experience in this matter, we would be glad to hear it and know how much of a demand there is for bees in bulk in your section. Any information concerning the mode of procedure would be appreciated." Southwestern Bee Co.

San Antonio, Tex., October, 1914.

There is always a demand for bees in early spring. Since the decrease in express rates, the shipping of bees has increased considerably. The old way of shipping colonies in full-size hives is too expensive. Hundreds of shipments are annually made from the South even to Canada. But the ship-

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Bitterweed Honey.—"I have about 100 pounds of fine honey that is as *bitter* as *dogwood.* I have taken only a few pounds from the hives. The comb is full and capped and looks as fine as can be, but it is impossible to eat it. This honey has been gathered during August and September, mostly from a yellow blossom called 'bitter weed.' It is an annual. It is said to have been introduced here by the purchase of hay, only a few years ago. I do not know where it came from. I haven't yet found any one who knows any other name, in this section. Cows begin to eat it in the spring, the milk and butter are made bitter, and it naturally

COFFEE PLANTATION AT PONCE, PORTO RICO, AND APIARY

In case you desire to publish it, I take pleasure in sending to you a photograph of the coffee plantation "Hacienda Burenes" situated near the city Ponce), and managed by the firm of Domingo & Amelia Serra, of which I am a member. It produces every year 300,000 pounds of coffee, more or less. It possesses steam and gasoline apparatus for cleaning, washing and drying the grains. It has electric lights and all modern improvements, and is located at an altitude of 1000 feet above sea level. I have marked with an X the site of my apiary and the honey-extracting house. In this apiary the hives are in a hut or shed 'barraca), open on all sides and covered with a straw roof. I have other apiaries, on the same plantation, located in the open air. Later, I will gladly send you views of these

Ponce, Porto Rico. Rodulfo Del Valle.

[The view is very interesting, and we will gladly reproduce others. Many thanks.—Ed.]

obtains the name of 'bitter weed.' It grows both in fields and pastures.

"It seems to have about the same nature as dog-fennel or horse-fennel. It grows, in this section, wherever ragweeds, fennels, crab-grass and Bermuda grass will grow. It thrives best in cultivated lands. It begins to bloom and seed in early summer and continues on until frosts. Under most favorable circumstances it reaches a height of about 12 to 15 inches, then the first bloom appears, and around this and beneath it shoot out branches until it has sometimes as many as 190 seed heads; these may have from 40 to 50 seeds to the head; so you see it is possible for one seed to reproduce itself 5000 times in one season.

"I am sending you, in this letter, a twig of the weed. *If I leave this honey in the hive, will the bees ever ripen it in such a way as to take the bitter out of it?* If you have had any experience with this kind of honey, please advise me what to do and I will most heartily appreciate it." REV. W. S. WALTERS.

Laurens, S. C.

To make sure of a correct answer, we referred the enquiry to our learned friend, Dr. L. H. Pammel, the botanist of the Iowa Agricultural Experiment Station, who is now busy on a study of the Iowa honey-producing weeds and plants. He says:

HELENIUM TENUIFOLIUM
Better known as Bitterweed. (See page 410.)

"This is the bitter weed or narrow-leaved sneeze weed. This weed, a bad weed in Texas, occurs now from Texas to Virginia. It is the *Helenium tenuifolium*.

"There are several other *Heleniums* in the United States. In the Rocky mountains a species occurs which is carefully avoided by stock because of the bitter taste of its leaves. I have treated of the poisonous nature of this plant in my 'Manual of Poisonous Plants.' It is said to have been widely scattered with hay after the Rebellion. It is known to be the cause of bitter milk and even death of animals. The plant contains a narcotic poison just as our northern sneeze weed does:

"This fall I saw honey bees working plentifully on the northern sneeze weed, *Helenium automnale*, in Marshall Co., Iowa."

The name *Tenuifolium* is due to the tenuity of the foliage of this weed. Turning to the files of the American Bee Journal, we find the plant described at different times, by beekeepers unacquainted with botany, as yellow "camomile" or yellow "fennel," which it resembles slightly. Dr. J. P. H. Brown, of Georgia, a former contributor of the American Bee Journal, deceased in 1909, described the *Helenium tenuifolium* in November, 1886. He states that an extract from this plant was used during the Civil War as a substitute for quinine in the treatment of chills and fever. He reports its honey as unfit for use by man, but good for breeding purposes. It has medicinal properties.

The northern sneeze weed, *Helenium automnale*, mentioned by Dr. Pammel, is reported at different times as a good honey producer. U. Stephenson, in 1888, W. J. Cullinan, in 1890, praised it as a honey plant, though the honey is said to be slightly bitter.

Speaking of the bitter weed of the South, R. H. Whitfield, in the Southern Live Stock Journal, held that there was a greater freedom from disease among bees in the South than in the North, owing to the tonic and prophylaxis of the bitter element in this fall honey.

This honey should be saved and fed to the bees to hasten the breeding in early spring.

◆

Death of James G. Smith.—Through our mutual friend, Dr. A. F. Bonney, we have learned of the death of Mr. James G. Smith, which occurred at Medford, Oreg., on Sept. 12. Mr. Smith kept bees in Iowa for more than 40 years, and though very old was still a beekeeper at the time of his death.

◆

The Tariff on Bee Products. — The Protective Tariff Encyclopedia published by the American Protective Tariff League gives a comparison of the rates of duty during the Payne-Aldrich law and under the present Underwood law.

The duty on honey under the former law was 20 cents a gallon. This has been reduced to 10 cents a gallon under the present law.

Beeswax was formerly and still is admitted free of duty.

◆

Minnesota Inspector Report.—The report of J. Alf. Holmberg, Inspector of Apiaries for Minnesota, is just out. During the year 374 apiaries were inspected, containing 6975 colonies. Of these, 33 apiaries with a total of 197 colonies were found to contain disease. Mr. Holmberg is very well pleased with the small amount of disease found, and states that it is now well under control.

In commenting on the crop, he says:

"The bee industry in the State of Minnesota has been nearly a total failure this year, the spring having been unusually wet and cold. There are few places showing surplus honey, but in the majority of apiaries feeding has been necessary. This state of affairs makes it very unpleasant for both the beekeeper and the inspectors.

"I expect to see a better honey crop next year, as conditions look very promising all over the State at this time."

◆

Chicago - Northwestern Beekeepers' Convention.—The 18th annual meeting of the Chicago-Northwestern Beekeepers' Association will be held at the Great Northern Hotel, Jackson Blvd. and Dearborn St., Chicago, Thursday and Friday, Dec. 17 and 18. An extensive program has been arranged, and as several large beekeepers, such as N. E. France, E. S. Miller and others have signified their intention of being present, a good meeting is assured. The program follows:

THURSDAY, DEC. 17—MORNING SESSION.

9:00 A.M.—Social hour.
10:00 A M —President's Address—C. F. Kannenberg
10:30 A.M.—Reading of minutes and report of Secretary-Treasurer.
11:00 A.M.—American Beekeeping—Past and Future—L. A. Aspinwall.
Crop reports.

AFTERNOON SESSION.

1:00 P.M.—Shipping Bees North and South—H. C. Ahlers.
2:00 P M—Country Wide Advertising to Increase the Sale of Honey—G. E. Bacon.
3:00 P.M—Report of Delegate to National Convention—E. J. Baxter.
4:00 P.M.—Bee Cellar—E. S. Miller.
Question Box.

THURSDAY EVENING SESSION.

Sweet Clover—Prof. J. G. Mosier, University of Illinois.

FRIDAY, DEC. 18.

9:00 A.M.—Social hour.
10:00 A.M.—The Price of Sugar and the Honey Market—F. C. Pellett.
11:00 A.M.—The Foulbrood Problem—N. E. France.

AFTERNOON SESSION.

1:00 P.M.—Stimulative Feeding—Kenneth Hawkins.
2:30 P.M.—Brood-Rearing for Crop Results—E. L. Hofman.
3:30 P.M.—Comb Honey—Preparing for the Crop—A. L. Kildow.
4:00 P.M.—Beekeeping as a Business—E. H. Bruner.

◆

Second-Hand Cans in Australia.—In one of our recent numbers we stated that a regulation has been passed in Australia prohibiting the use of second-hand cans for storing of honey. In this we were not entirely correct. A letter from Major Shallard, in New South Wales, reads as follows:

"The regulation as above was brought into force in the State of Victoria only on the recommendation of the pure food commission who stated that old cans picked up on the rubbish heaps and not properly cleaned were being used by the beekeepers. This was obviously pure nonsense, as no beekeeper would use dirty, rusty tins when he could get bright, clean second-hand (if you can call a tin which has just been emptied of petrol second-hand) cans, or tins as we call them, for 6 cents each.

"As I said, the regulation was brought into force, but was found impracticable and is now a dead letter. The regulation would just cause the very trouble it was expected to avoid. The tins here have to be given away with the honey.

"Good, bright second-hand tins cost only 6 cents each, and if any get rusty or dirty the beekeepers pitch them away. New tins, specially made, cost 22 cents each, and if they get rusty or dirty they look at the cost before they decide to sacrifice them. Another thing, these tins are so costly that beekeepers will take them back and fill them a second time, but he will not take back any petrol tins.

"The regulation was a stupid one, made by officials who did not know anything of the apicultural business. Victoria is only a small part of Australia, and the latter is as large as the United States."

◆

Missouri Meeting.—The 12th annual convention of the Missouri Beekeepers' Association will be held Dec. 7 and 8 in the Commercial Club Rooms at St. Joseph, Mo.

PROGRAM

MONDAY, DEC. 7—10:00 A.M.

Address of President—J. W. Rouse, of Mexico; Report of Secretary-Treasurer—J. F. Diemer, Liberty; Appointment of Committees; Reception of members.

AFTERNOON, 1:30 P.M.

Rearing Good Queens—J. F. Archdekin, of St. Joseph.

How to Introduce Them and the Smoke Method Described—C. P. Dadant, of Hamilton, Ill.

Artificial Increase—Dr. G. Boher, Chase, Kan. (Fifty years' experience.)

Management of Bees During a Good Honey Flow—L. E. Altwein, of St. Joseph.

Disposing of the Honey Crop—M. E. Darby, of Springfield, Mo. (State Inspector of Apiaries.)

EVENING, 8:00 P.M.

Preparing Bees for Winter—Frank C. Pellett, of Atlantic, Iowa. (State Inspector and Vice-President of National Association.)

Sweet Clover—S. P. Halsey, of Nemeha Co., Kan.

Question Box.

TUESDAY, DEC. 8—9 A.M.

L. Haseman, of Columbia, Mo., Entomologist and Chief Inspector of Orchards and Nurseries, will tell us about the Interdependence Between Bees and Horticulture, and Dr. C. R. Woodson, Superintendent of the Sanitarium, St. Joseph, Mo., will tell us about "Orchard Spraying," etc.

C. B. Baxter, of Nauvoo, Ill., a very extensive fruit grower and apiarist, will tell us about "Bees and Fruit."

A. V. Smith, of St. Joseph, will read a paper on "Shook Swarming."

O. S. Mullin, of Holton, Kan., on "Carniolans."

N. M. Jennings, of Franklin, Ind., a veteran, will describe "His Method of Wintering."

Report of standing committees, incorporating, etc.

It will be well worth your time and expense to attend this meeting. To the novice, wintering bees is the hardest problem. Frank C. Pellett, of Iowa, and N. M. Jennings, of Indiana, will tell you how it is done.

◆

Kansas Annual Meeting.—The annual meeting of the Kansas State Beekeepers' Association will be held in the Commercial Club Rooms, Topeka, Dec. 4 and 5. Mr. Frank C. Pellett, of Iowa, will deliver a lecture on the subject of "Wintering." Every one interested in bees is requested to attend these meetings.

O. A. KEENE, *Sec.*

Topeka, Kan., Nov. 5.

◆

Washington State Meeting in January.—The Washington State Beekeepers' Association will hold their 21st annual convention in the Farmers' Room in the Court House in North Yakima, on Wednesday and Thursday, Jan. 6 and 7, 1915. We expect a large gathering, and are in hopes to have some celebrated visitors in attendance. We desire the attendance of every member, as we shall discuss the foulbrood law which the committee is now working on and wishes to have passed at the coming meeting of the Legislature.

J. B. RAMAGE, *Sec.*

North Yakima, Wash., Rt. 7.

◆

Kansas Horticultural and Bee Meetings.—The Kansas State Horticultural Society and the Beekeepers' Association of that State are planning to cooperate in holding their meetings this winter. The horticultural meeting will occur on Dec. 2, 3 and 4, and will be followed the same week by the bee meeting.

We understand that Mr. Frank C. Pellett, the efficient inspector for Iowa, is to be on the program of both meetings. His subject at the horticultural meeting will be, "Our Backdoor Neighbors."

◆

Massachusetts Wax Rendering Station.—Dr. Burton N. Gates, Associate Professor of Beekeeping at the Massachusetts Agricultural College, informs us that the college has installed at Amherst a plant for rendering beeswax for the beekeepers of the State of Massachusetts. They have a capacity of several hundred pounds per day. Beekeepers of that State who desire to try their services should write to Dr. Burton N. Gates, Amherst, Mass., before sending any combs to them.

◆

National Meeting at Denver.—The National Beekeepers' Association will hold its annual session at Denver, Colo., some time during the month of February. The exact date and program will be announced later. Denver being situated in the center of the producing country, and many of the largest producers of the country within easy reach, we may well expect a meeting of "live wires." Present indications promise well for a big attendance. Come and 'get together and boost."

GEO. W. WILLIAMS, *Sec.*

Redkey, Ind.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Failure With Smoke Method

Mr. Arthur C. Miller says that the failure to introduce queens by his method was emphasized in this department in the October number. There was certainly no desire to emphasize it as a matter to be proud of. It was rather a matter of humiliation to both Dr. Miller and his assistant that they should have failed with a plan which was so signally successful in the hands of others. But generally we may benefit by our mistakes, and so it has been the policy in this quarter to report failures as well as successes.

The trouble in this case is to know just why there was a failure. There was no attempt to make an improvement on Mr. Miller's plan, but every effort was made to follow implicitly his instructions. Mr. Miller makes two guesses as to the cause of failure; first, that the bees were not in a state of distress from choky smoke and close confinement; or, second, that the bees were in a disturbed condition from getting the queen out. The second guess can hardly apply, for the queens had been out at least the day before the introduction. It is quite possible that the bees were not in a state of sufficient distress; but why? The smoke was given exactly according to directions; at least it was the earnest intention to follow directions implicitly. He is quite right in saying our hives are not smoke-tight. In hot weather there is a 2-inch entrance and a ¼-inch ventilating space at the back of the hive next the super. But at the time of operating these were closed.

In trying to think of what should make the difference it was natural to think of that deep space under the bottom-bars, and then to think that this would give the queen less chance to pass directly through the hostile peripheric bees. Mr. Miller rightly says the idea of this outer wall of bees was not from him. No, it will be found on page 385 of this journal for November, 1913, where Dr. Bruennich says in part: "On the periphery outwardly of the pollen-garland, we find the old, malign, suspicious bees are always snuffing treachery. * * * With the direct method of introduction, the peripheric bees on the board are intimidated by the smoke; therefore, the queen may pass those ill-tempered guardians and penetrate to her kingdom, the center, where there is no longer any danger."

Even if we reject Dr. Bruennich's view, we may still, by way of guessing, lay the fault to that deep space of 2 inches under the bottom-bars, taking in connection with it Mr. Miller's guess that the smoke was not sufficiently confined. Certainly it will take more smoke to fill such a hive than one with the ordinary bottom-board. If Mr. Miller thinks this is not the right guess, it is his turn to guess.

Beekeeping in a High School

Beekeeping as a vocation for women is being encouraged by the school authorities among the girls of the Nature Club of the Girls Central High School, 17th and Spring Garden streets, Philadelphia, Pa., and the idea has gained many enthusiastic followers within recent months.

The great interest aroused in the students, began last year with the purchase of a bee hive by the Board of Education, which was installed at the school. With the introduction of the bee hive, a few girls took up the study of bee culture, more as a fad and from curiosity than anything else. From this small beginning the idea began gaining a firmer foothold upon the the minds of the students as they went deeper into the ramifications of beekeeping, and gradually other students became interested until now bee students at this school number over two score.

No professor at the school, no matter what the course may be, has been able to arouse a third of the interest in his or her course, as that taken by the students of bee culture, who willingly pursue their studies long after school hours.

Several of the girls of the bee chapter have purchased hives and continued the study at their homes, and it is more than possible that future owners of extensive apiaries will be found among the enthusiastic students.

Several teachers at the school having become interested in the new chapter of the Nature Club, have taken up the study of bees during their spare moments, and are compiling lists of books for the benefit of the students. They are enthusiastic over the interest shown by the students of the school in bee culture, and are using every endeavor to arouse interest among hundreds of the other girls in the work.

BEEKEEPING IN THE PHILADELPHIA SCHOOLS

Honey Trees and Plants of the Blue Ridge Mountains

The winter of 1913-14 was ideal for our bees in the mountains of North Carolina. Steady cold all winter with no unusual cold snaps. They came through with plenty of stores in 8-frame hives, when apples bloomed, which was the last days of April. We have a fine fruit country, so have lots of apple blossoms. My bees began in the supers before apple blossoms were all gone and swarmed May 16, and the honey, which was a little dark, was gathered from poplar and dogwood trees and wild flowers. I remove the supers from the hives where the bees have commenced to work to the ones that are backward, just when the locust blooms, about May 20, in order to keep the locust honey separate.

We got a full super from the locust, which was fine honey, so thick and white. There are thousands of locusts in this section. A good farmer never cuts a locust except for fence posts. They stand about in the pastures, and the turf is always better under the locusts. A locust tree in full bloom in good weather is the most beautiful sight a beekeeper can see. Unfortunately, the frost gets the bloom sometimes, but it hardly ever gets all of it, as those on the hills do not freeze as easily as those in the valleys.

White clover is our next honey plant, and I think our bees get honey from red clover, too, at least they work on it a lot. Our bees work slowly in the super after locust bloom is over until chestnuts bloom, about June 20, when they go to work with a rush. I am not sure whether the bees get honey from the chestnut bloom or not, but I guess they get both honey and pollen.

Sourwood is next. It is the king of all honey plants in the South. If you locate where your bees can get sourwood honey you are safe. Just tell any one you have sourwood honey and that is all they want to know. Sourwood has never failed since I have kept bees, and it yields in such an abundance. You can take a spray of flowers and slap them across your hand and see the drops of honey (nectar) on your hand. It is marvelous to watch the honey the bees store in the supers from day to day.

Our honey flow begins to slacken after July 15. Later on in August we sometimes get some buckwheat honey. We have lots of fall flowers to keep up brood-rearing, but not for any surplus.

Black bees are kept mostly. A few have ordered Italians, but they soon get mixed. We bought ours from the south side of the mountains, which is the best bee country for Italians, but since I have gotten some real Italians I see mine are more like black bees.

There are a few farmers that have patent hives, but bees are kept mostly in box gums, and a very few ever have honey to sell. I don't suppose there is a regular "professional" beekeeper to be found anywhere close by. If there is one I haven't heard of him.

We do not have any bee diseases. So far the moth gets the credit for every colony that dies, and you cannot make a beekeeper believe otherwise. One neighbor ordered "moth balls" to put into his hives. However, the bees died before they came, so I did not see which decamped, bees or moths.

There is lots of unoccupied bee territory in this country, especially along the Blue Ridge, and a beekeeper on the top of the mountains could take advantage of the flora of both sides; for instance, the locust on the south side blooms two weeks earlier than on this side.

We winter in single-walled hives without any protection. I have been thinking I would pack one for winter just to see if they do winter better. However, I have been "beekeeping" three years and have 29 colonies, and have never lost a colony. The "hubby" says if I should lose one we would have to have a funeral and bury it as I am so cranky over my bees.

[Mrs.] J. T. Reeves.
Laurelsprings, N. C.

Your interesting letter shows very clearly the great difference in locality as to the sources of honey surplus. You get surplus from apple, poplar, locust, and sourwood, while we are limited practically to white clover, although we do get some fall honey; but so nearly is white clover our only source that if it were cut off we would have to quit beekeeping.

You say sourwood never fails. You are surely fortunate to have at least one source that never fails, and doubly so as it is your finest honey. With us white clover too often fails, and that spells failure of the honey crop.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Delta Co., Colo. Beemen Organize

The Delta County Beekeepers' Association was organized at Hotchkiss, Colo., Saturday, Oct. 31, with about 20 members. The Cedaredge district was especially well represented, nearly all the beemen from there being present.

The spraying and foulbrood troubles were discussed, and committees appointed to work on these problems and if possible recommend some definite action at the next meeting which will be held in Hotchkiss. Mr. Cole, from Cedaredge, had on exhibition at the meeting a dovetailed hive, which he had made in his mill in Cedaredge. It was made from native clear lumber and was certainly well made. Its advantages are that native lumber is not so subject to warp, and there is a saving in cost. Mr. Cole will also make shipping cases another season, if the demand warrants it.

The expressed opinion was that spraying cover crops in orchards while the cover crops are in bloom should be prohibited by law.

The association members each furnished the secretary the number of colonies each has and also the names of his neighbors and their number of colonies. This information will be of great service t› the inspector.

The committee on foulbrood will also advise with the inspector, and a plan of operation for control of the foulbrood situation is being formulated.

The assessment of one cent per colony for protective purpposes is provided for as well as a 50 cent yearly membership fee.

The officers for the coming year are: President, Frank H. Drexel, of Crawford; Vice-President, Geo. F. Lester, of Delta; Secretary, Chas. V. Alton, of Paonia; Treasurer, R. W. Ensley, of Read.

The Foulbrood Situation

Mr. H. E. Harrington gives some of his ideas on foul brood inspection on page 354 of the October number of the American Bee Journal. He says that before foulbrood may be suppressed or eradicated every beekeeper must be his own inspector. He also recommends the licensing of beemen as fishermen and hunters are licensed.

Every beekeeper should be his own inspector, but I do not agree with him that he must be, if any control over foulbrood is to be had. The inspectors are a great help in limiting and controlling American foulbrood, and American foulbrood has been markedly reduced in percentage in all Colorado counties where thorough inspection has been carried on for two years or more, without regard to the abilities of the average beekeeper to detect the disease.

If some method could be devised such as licensing beemen it might help, but it would be rather inconvenient for a man to rush off to the Court House for a bee license before he could hive a swarm of bees that may have clustered on the limb of a tree in his orchard. Practically it might work out as well as do fishing and hunting licenses. But shall we from now on consider beekeeping as a sport?

Mr. Harrington says that there is

GLEN FREEBORN IN HIS APIARY AT ELMDALE, KAN.

nothing binding on the beekeeper to clean up. I would consider that the knowledge that if treatment is not given within the time specified that the owner is liable to a fine and perhaps have his bees destroyed, is fairly binding upon the beekeeper. He acts accordingly, at any rate. In a majority of cases treatment is given with a good degree of promptness.

The inspectors have the right to destroy diseased colonies and combs in Colorado, and I think the same is true in other States.

BEE-KEEPING IN DIXIE~

Conducted by J. J. WILDER, Cordele, Ga.

Beekeeping as a Business

The country is experiencing at present disturbed conditions, and many men in all vocations of life are severely tried financially. Under such conditions it might be a good time to bring up beekeeping as a business and see how it compares with other lines of business.

We are holding our own very well. Giving my own experience, under the conditions, marketing and collecting has been a little backward, but as yet there has not been any reduction in prices, and I will be able to sell out by the time my new crop is ready for market, should the conditions not get worse. For those who devote their entire time to beekeeping, and have no other business in connection with it, I can frankly say that even the man who is making the poorest showing is making at least a good living at beekeeping. When this season's business is wound up, none of us should have to borrow money with which to do business. That shows we are doing well. All of my honey is removed and packed ready for our regular customers except about half of our Florida crop, which is yet to be prepared for market. With all this done, I am now (Nov. 6) starting with my family to Bradentown, Fla., to spend the winter again. I hope my correspondents will note the change in my post-office address.

It might be said by some that I have a great number of apiaries irregularly scattered about at farm houses, and I have them cared for by the farmers, but this is not so. Each one of my apiaries is well established, and the man in charge of each branch and its yards makes it his sole business to look after them. My business has six branches or centrally located apiaries where I have packing houses and a home for my apiarist, who looks after his branch.

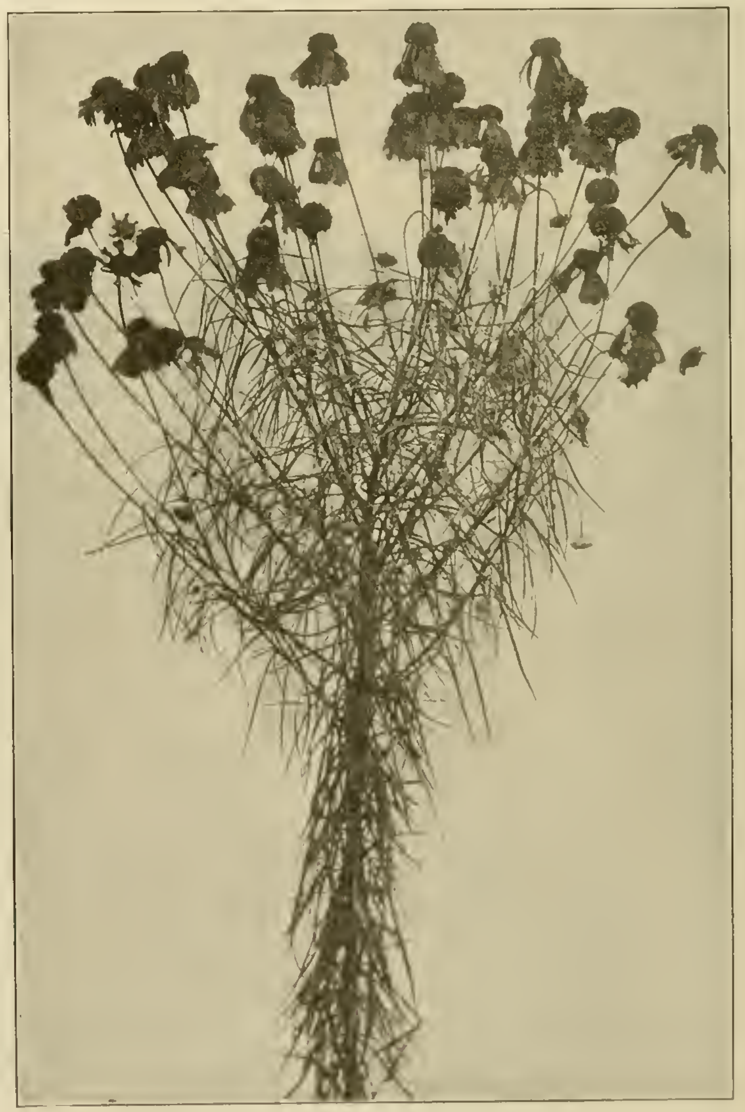
Names of branches in Georgia are: Home branch, Suwanoochee Creek branch, and Suwanee River branch. In Florida are the O'Brien branch, Branford branch and Fort White branch. There are 53 apiaries, consisting of over 3000 colonies. Following are the names of the apiaries: Home yard, Mussellewhite, Jones Creek, Colon, Atkins, O'Brien, Grassey Pond, McAlpin, Barnette, Jumbo, Mulberry, Landrum, Cowsink, Pinkham, Live Oak, Gilley, Mystery Coon, Herlong Valley, Wilson, Cox, Pond, Fort White, Columbia, Suwanee, Cypress Pond, Fargo, Tupelo, Pine Ridge, Fouchton, McCain, Buck Creek, Costine, Clements, Odom, Jackson, Bryant, Williamson, Wray, Wells, Williams, Wheeler, River Lake, Alapaha, Pitts, Seville, Rebecca, Rochell, Sanders, Byron, Gleaton and King.

The Bitterweed

This honey plant made its appearance in the South about 50 years ago. It comes up from seed the latter part of spring, or about May 1, and grows to a height of about 14 inches by the middle of August, when it begins blooming and blooms until about the middle of October, dying down just before frost.

The photograph shows a single stalk of this weed during its blossoming period. The husks of the blossom which cluster about its base soon drop and the tiny seeds ripen. This plant will grow and bloom anywhere and on any kind of soil in the South except on very low wet land, but it spreads slowly except where the seeds are scattered by the tramping of animals and passing vehicles. That is why we see it only along roads and byplaces where animals most frequently pass.

It is truly a nectar-laden plant. Though it does not grow in great fields as yet, bees will store from 20 to 35 pounds of surplus per colony from it. Its flowers are a deep yellow, and the honey light yellow, heavy body, and soon granulates when extracted. It is very bitter; in fact, it is about as



THE BITTERWEED OF THE SOUTH
This specimen is shown during latter part of its flowering. (See page 406 for early bloom.)

offensive to the palate as quinine. In most sections in the South the cotton plant begins yielding two or three weeks before bitterweed, and if it were not for the well established fact that bees do not desert a honey plant for another as long as it yields well, nearly all the summer and fall honey would be unfit for market on account of the bitterweed. In sections where cotton does not yield much the honey is all bitter, and a small amount of it will ruin a tank of good honey. Bitterweed is also a great pollen plant, furnishing abundance of bright yellow pollen throughout its blooming period. Even the stems and foliage of this plant are intensely bitter and no animals eat it.

To give the reader an idea of how bitter it is, let me relate an incident that happened in my boyhood days, while we were traveling in Texas. We camped near a town one evening, and after supper my father went down and brought back a good home-cured ham to eat on our long journey to the next town. On the way back with it, swinging down in his hands, perchance some of these weeds touched it, and having no covering it came in direct contact with them. On the following day when we prepared some of it to eat, it was so very bitter that we could not use it. It was several years before we learned where the trouble lay.

◆

Hive Making

The season is at a close, the bees are put up for winter, and the question of hive making for the coming season is in order. Where suitable lumber is obtainable, that is, lumber that will last and not warp too much, and time permits, almost any one can make hive bottoms and covers that will answer the purpose fairly well. But it takes a mechanic to make hive and super bodies, as there must be less than ⅛ of an inch variation when put together, as the interior fixtures will not fit well, and at the same time allow the proper bee space. When it comes to the interior parts which are very complicated or irregularly cut out, it takes not only a mechanic, but a machine with suitable fine saws, cutter boards, etc.

For the benefit of those who may have a small light running wood-working machine suitable for this purpose, or for those who may contemplate buying one soon, I will illustrate by a cut how I cut out frames and section holders. I use as a pattern a regular factory-made frame, section holder, or any other part I wish to get out and do not change the dimensions at all. All the lumber used for this purpose is dressed two sides and sized to thirteen-sixteenths inch at the factory where I buy it, and it is usually narrow. The material for the longest parts I first cut up in proper lengths, then I dado the ends, and rip them out and cut the grooves for wedges last.

◆

Valuation of Colonies and Apiaries

"I have 100 colonies of bees. If I should die what would they represent in money to my wife? If I wanted to borrow some money at what could I value them? Description follows:

"One hundred colonies in 10-frame hives, wired on full sheets of foundation with worker comb.

"All hives are painted with one good coat of paint (cost of paint $2.50 per gallon).

"One hundred and fifty comb honey supers painted as above, with inside fixtures.

"All of these hives and supers are as good as new; in fact, I bought 75 of them in April of this year.

"About half of the colonies have full blood Italian queens; the other half have from the common to three-eighths Italian.

"All the hives are of the Root factory make. It costs money to buy factory hives and put bees in them, and I want to know what I can safely value them at. I know that I could sacrifice them at $1.00 each, or that I could be making a lot with them and refuse to sell at $20 each, but neither of these valuations would be correct.

"Joseph S. Scott.

"Mt. Pleasant, Ala."

Answer.—The true value of bees when it comes to offering them for sale is hard to ascertain, for very few are sold at their true value. They are usually disposed of below cost.

Condition of the bees, hives, etc., have much to do with it. As yours are in first-class condition, and considering the cost of supplies at present, I believe their true value to be about $7.35 per colony; that is, they are worth that much to a progressive apiarist.

As to borrowing money on bees or giving them as security, this would be hard to do. Banks would not make you a loan with them as a security and very few individuals would.

CALIFORNIA BEE-KEEPING

Conducted by J. E. Pleasants, Orange, Calif.

The National Meeting

We hope the National people will not forget California's invitation to meet here next year. We shall be glad to have them come to either San Francisco or San Diego, as suits their good pleasure. Our memories of the National meeting in Los Angeles are so pleasant that we wish they might hold a meeting in both places.

[We understand that the National directors have virtually decided to hold their February meeting in Denver.—Editor.]

◆

Olive Honey—Other Plants

In regard to the question raised by the Italian beekeepers as to whether the bees gather nectar from the blossoms of the olive, it is the consensus of opinion among the beekeepers here that they do not. I have never noticed them gather anything except pollen. Since the question was asked, however, I have questioned a number of beekeepers about their observations of the olive, and they are all of the same opinion—that while bees get large supplies of pollen, they gather no nectar. We have large groves of olive trees here in the beekeeping district, so I think there can be no mistake.

A plant sent us by Dr. H. W. Smith, of Folsom, which he gathered in the Lake Tahoe region, at an altitude of 6000 feet, is evidently an epilobium or "great willow herb." The specimen reached us in bad condition, so it is impossible to be accurate. The Doctor says it is much visited by bees.

We have also run down the Tinker's weed or Tinker's root, but did not find any mention of it growing in Africa. However, the description may be of interest to our Natal beekeeper, and as he wished a botanical description of the plant, we give a rather full description from the "Field Book of Wild Flowers:"

"Tinker's weed (*Triosteum perfoliatum*).

"The fever root, so named from a Dr. Tinker, of New England. It has purgative and emetic properties. Also, erroneously, 'Tinkar's root.'

"*Triosteum*—a genus of gamopetalous plants, of the order *Caprifoliaceæ* and tribe *Loniceræ*. It is characterized by a tubular bell-shaped corolla gibbous at the base, and a three to five celled ovary with one ovule in each cell. There are about six species, native of Asia and the eastern and central United States. They are herbs with a perennial root, and little branched stems with scaly buds. The leaves are sessile, entire, opposite and somewhat connate at the base. The dull yellow, purple or whitish flowers are solitary, or clustered in the axils, or rarely condensed into short terminal spikes. The fruit is a coriaceous or fleshy berry, with smooth, bony, angled or ribbed seeds.

"*T. perfoliatum*, a rather coarse erect species with purplish flowers and orange colored berries, occurring from Canada to Alabama, is known as *fever root*, also as *horse gentian*, *Tinker's weed*, *wild ipecac* and *wild coffee*. It produces a long, thick, yellowish or brownish root with a nauseous taste and odor, locally used as a cathartic and emetic. One other species, *T. angustifolium*. with yellowish flowers, occurs in the United States.

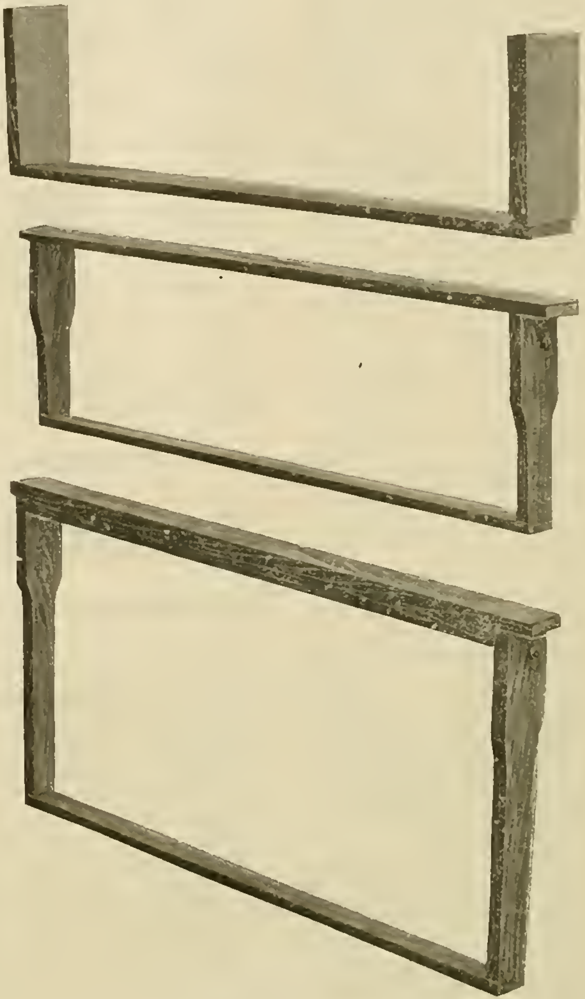
Dr. L. H. Pammel, State Botanist for Iowa, commenting on the willow herb mentioned previously in this article, says: "The specimen of plant from Dr. Smith, of California, is the fireweed or great willow herb (*Epilobium angustifolium*), known sometimes in the northwest as elk's weed. It is a well-known plant in the northern States, from the Atlantic to the Pacific, appearing in clearings, especially where a fire has been through the timber. Thousands of acres are covered with it in the Rockies, also in Washington, Oregon, Wisconsin and Minnesota. It is not, however, common in southern Wisconsin or northern Illinois, rare in Iowa. It is a leafy plant from 2 to 4 feet tall bearing numerous magenta colored flowers, followed later by slender pods with numerous seeds, each seed bearing a tuft of hairs. There is a common belief that the seeds of this plant remain buried in the soil for many years and after a fire spring up. The seeds are, however, carried by the wind to charred humus, where the plant delights to grow.

"A beekeeper in Washington a few years ago told me that it was one of the best honey plants in Washington. Where the plant grows should be a paradise for the beekeepers."

Eucalyptus Honey

As we promised to make some further observations on eucalyptus honey later in the season, we will give the Bee Journal the results, although they are quite meager. The sample sent was stored in empty combs placed in a colony in September when the sugar gum and iron bark were in bloom, and the bees were working very heavily on these two species. At this time there were only two species of wild plants in bloom—the dodder and the drouth weed. And as far as we could see the bees were not working on either of these to amount to anything, while they were like a swarm on the eucalyptus bloom So it would look like the honey stored at that time was mostly eucalyptus at any rate. The only trouble was that we have not a large number of these trees—about 150—not a large grove. I have always noticed, however, that the eucalyptus seems to secrete large quantities of nectar whenever in bloom.

The honey is light amber of heavy body, and has a decided but not unpleasant flavor.



FRAMES—AFTER WILDER

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Ontario Convention

The Ontario convention is again a thing of the past. I have just arrived home from attending it, and these notes are being hurriedly written, as the date is later than the copy is supposed to start. The attendance was not as large as last year, but up to expectations, as the poor season and other causes were expected to have an effect. It was commented on by all, that none of our friends from "over the line" were with us—the first time for a number of years. We are consoling ourselves with the thought that the convention of 1915 will have double the attendance from there compared with other years, and thus help even up.

Editor Dadant and his estimable wife passed through Toronto early Friday morning on their way home from Montreal, but arrangements forbade them stopping. Fortunately, Mr. Hopper and myself learned of their coming, and had the pleasure of a few moments conversation and a hearty hand shake before the train pulled out for the West.

At a later date I hope to give notes of the convention proceedings. We had a good convention, although the season had been poor—very poor in most cases, yet nearly all the beekeepers seemed cheerful and happy, placing great expectations on the prospects for "next year."

Bees Generally in Good Shape

Up to date (Nov. 14) we have had a continuation of the fine weather spoken of in our last notes. There has been a gradual cooling of the temperature, and from now on we can expect but a few days, if any, before flights are stopped for three or four months. Reports at the convention seemed to show that most colonies go into winter with plenty of stores, even if sugar was hard to obtain; this is especially true among beekeepers who make a specialty of the business. Wherever bees are fit to "take their chance," heavy losses may be expected in localities where the fall honey flow was a failure.

Every Farmer a Beekeeper?

Louis Scholl says in a recent issue of Gleanings in Bee Culture: "I have never called a farm complete without a few colonies of bees carefully kept in modern hives." Dr. Miller commenting on the same says: "I sympathize with that view, and yet it is more poetical than practical." After a number of years advocating as does Mr. Scholl, I am now thoroughly in accord with Dr. Miller's views. I might go a good deal further than he does. Why? Because I have found that it is an impossibility; it certainly is not a probability to have such conditions. Personal experience has taught me that not one farmer out of a dozen will keep bees and give them attention unless every year be a good one—even then many will neglect them. But let a few years like the present one come along nearly all will become disgusted with the bees, and in many cases they become a menace to other bees near, especially if disease is in the neighborhood. While not admitting that I am getting more selfish as I grow older, I certainly have dropped the slogan, "Encourage the farmers to keep bees."

Might Have Been Worse

While the past season was the worst that I have experienced here in York county, it was practically a total failure—yet after reading in the last issue of the American Bee Journal what our Editor and his staff had to contend with in the vicinity of Hamilton, Ill., we felt that it might have been worse with us. To be forced to feed in July, August and September is something we have never yet had to do, but our Illinois friend's experience shows that such a thing is a possibility.

NOTES FROM ABROAD

By C. P Dadant.

On the morning of Sept. 5, our kind old friend, Dr. Triaca, came after us at the hotel with an automobile. We were to spend the day with him at the Villa Visconti, some 15 miles from the city of Milan. Dr. Triaca had already taken upon himself the task of securing for us round-trip railroad tickets for our tour of Italy, so as to save us possible annoyance in making ourselves understood. We were much abashed at so much kindness. But when we remonstrated, he replied: "Would you not do the same for me, if I came to America? We are doing but our duty to our guests." It is a delightful thing to be so kindly treated, and by people whom one has never met before.

Dr. Triaca and Count Visconti are old friends and very intimate. They were in the Austrian war together and there Dr. Triaca was crippled for life. He wears a wooden leg.

The only counts we know of in America are the "no-count" counts who come here to marry millionaire heiresses as worthless as themselves. Take these out of your reckoning. The count whom we will have you visit today is one of those noblemen who are not only noble in their ancestry, but who are *noble men*, because their leisure is spent in useful pursuits.

We reached Cernusco-Sul-Naviglio towards 10 a.m. A mile or so from the village, we were met by Count Visconti riding a bicycle and dressed in spotless white, from his cap to his gaiters and his shoes. He made us take a direction from whence we could see his villa in its best appearance. (See cut.) We were looking for a country seat and not for a palace. Yet we could compare this immense home only to a corner of the palaces of Versailles, both in the magnificence of the decorations and the vastness of the rooms.

The daughter, and only child of Count Visconti, Mlle. Valentine Visconti, a lady versed in art, who speaks several languages, has, like her father, and even more than he, devoted herself to industry. They have interested themselves, for years, not only in bee culture, but in silkworms as well. The silkworm industry is the main resource of Lombardy. Silkworms are subject to diseases which play havoc among them, just as foulbrood does among bees. A number of years ago, a disease now known as "pebrine" began its ravages among the silkworms, throughout France and Italy, and destroyed them to such an extent that the silk industry threatened to disappear. The loss was so great that it was estimated at $20,000,000 for France alone, annually. The matter was referred to the famous Pasteur, the founder of practical bacteriology and discoverer of the cure of hydrophobia. Through his bacteriological studies, the corpuscles of "nosema bombycis" which produce the disease were discovered. Soon a remedy was suggested by him and, under the treatment indicated, establishments which had not been able to produce silk enough for the cost of the eggs were reaping large profits. The trouble arises from eggs laid by "corpusculous moths." In other words, if the mother moths which furnish the eggs for the next crop of silkworms are infected with the bacteria causing the malady, some of their eggs are unable to hatch or are sterile. Those which hatch are unhealthy, and the little worms die early instead of growing and spinning their silk cocoons. It proved necessary to inspect every female moth. This is done after the egg-laying.

First, the best cocoons are selected for reproduction. The heavy ones are females, the lighter ones males, so they are weighed on very sensitive scales so as to retain the proper number of each. After the hatching of the moths and

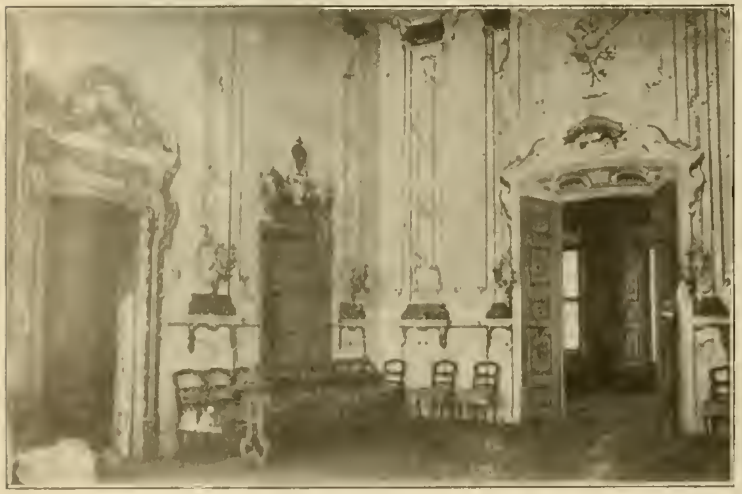
PARK AT VILLA VISCONTI

Monument on the Garden Wall, Villa Visconti

VILLA VISCONTI DI SALICETO, NEAR MILAN

Weighing the Silk Cocoons in Bulk

COUNT VISCONTI AND HIS DAUGHTER AMONG THEIR PEOPLE



CORNER OF THE PARLOR, VILLA VISCONTI

DINING ROOM, VILLA VISCONTI

IN THE SITTING ROOM

The "Contessina" Valentine at Her Desk

Another Corner, Villa Visconti

A Corner of the Studio, Villa Visconti

WEIGHING THE COCOONS TO ASCERTAIN THE SEX the mating, the female moths are placed in paper sacks where they lay their eggs to the number of about 500 and die afterwards. To discover the diseased ones, each moth when dead must be crushed in water and a little of the liquid examined under the microscope. If the corpuscles of pebrine appear, the eggs of that moth are destroyed. Those eggs only are preserved which are produced by a healthy mother. In his way, it is possible, to rear silkworms that are healthy. The percentage of diseased moths is now very small.

But the peasants of Italy were uneducated, and it was out of the question for them to purchase microscopes and examine their broods. It became necessary for educated people to take the matter in hand. Devoted men and women, belonging to the higher classes of society, gave their help. Miss Valentine Visconti, countess though she be, was one of the generous persons who devoted themselves to this task. We give herewith a few pictures, which by the way were made by Count Visconti himself, as well as others which will appear later. In these pictures our readers will see the country people or "contadini" employed by the lady and her father weighing the silkworms or examining the moths under the microscope. We witnessed the performance ourselves that day and were told that the house produced some 1500 ounces of eggs, of which there are about 12,000 in an ounce. So a portion of this magnificent villa is devoted to an agricultural pursuit in which science must lead to secure success. Isn't it interesting?

Count Visconti, who is 75 years young, seemed delighted to show us around. The villa has a beautiful park, with a stream, a water-wheel, a small lake, etc. The apiary is composed mainly of movable-frame hives of the Italian pattern, with tall narrow frames, looking very much on the outside like box hives. However, he has a few Dadant hives, and in one of the pictures he is represented as examining a comb. In another he is weighing a hive of bees, to ascertain the daily gain in weight.

The villa has an inner yard, a monumental stairway, ceilings between 20 and 30 feet in height, 3 stories, verandahs, with iron railings on all sides. There is a very large library with in-folio Bibles on parchment, genealogies from the middle ages, Italian and French authors of past centuries and a copy of the great "Encyclopédie" of 1765, the only one which I have ever had the privilege to see. The immense rooms looked to us for all the world like those of the Trianons of Versailles, with similar arrangements of tables, chairs, mirrors, silver candelabra and wall and ceiling paintings, dating back several hundred years. We felt awfully little in such a place. But our entertainer was so very kind that we finally felt at home, especially after the cordial welcome extended to us by the lady of the house.

When we sat down at the table, in the spacious dining-room, Mr. Visconti said: "America is visiting Italy; there is no longer any ocean." He is a great joker and a merciless, open critic. We

COUNT VISCONTI EXAMINING THE BEES

FISHING IN THE LAKE OF VILLA VISCONTI

DAILY WEIGHING A COLONY AT NOON BY COUNT VISCONTI

talked of America, her rapid growth, her success and her hopeful future. He said: "I love everything American, except the men who put their feet on the table or spit on the floors." Perhaps he had read Dickens' American Notes. If Dickens were to come back to life and make the trip again, he would see a great improvement in America on this score. But we still have room for improvement.

When we left our friends that evening, with the expectation of taking the train for Venice the next morning, we agreed to meet them at Bologna on Sept. 8. In order that we might not miss each other, Dr. Triaca instructed us to call for them at the dining-room of the Bologna railroad station, where they would await us. Their train was to arrive a little earlier than ours. In that city was to be the finest of our bee visits. It will be the subject of the next letter.

CONTRIBUTED ARTICLES~

Queen Etiquette—Some Comments on Introductions

BY ARTHUR C. MILLER.

THE American Bee Journal for October has several things to say about introducing queens, and Miss Wilson particularly emphasizes her failure with my method. (So far as I know now it is my own development, but some one may have preceded me though I have found no record of it.)

Nothing is infallible, but a method which works most of the time is good for something. The new way is far ahead of the cage plan in percent of success, and when the short time the colony is queenless is considered, and the simplicity of the operation is taken into account, the plan is far ahead of any other way I know.

I have been at a loss to understand why some of the "experts" in bee culture have failed while many of the novices, as well as others more in the veteran class, have no trouble.

The method is so absurdly simple that it seems as if any one could understand it, and yet I fear that it is its very simplicity which bothers the veterans. They have for so long gone through so many motions to accomplish simple things that they cannot divest themselves of them. That they are influenced by past ideas and practices I will show by the following quotations. Mr. Byer says: "One colony was given a particularly hard smoking so as to be *sure* of results." He evidently thought he knew more about it than the originator who said, "Don't use much smoke." He got the "results" and just what I could have told him—failure.

Miss Wilson says: "It has been explained that the secret of success of the plan is that under cover of the smoke the queen immediately rushes through the outer wall of the bees into the center of the cluster where she is safe." Where on earth that came from I do not know. It certainly was not from my pen. There is no "outer wall" nor does the queen do any "rushing."

Mr. Hand says: "Two methods of odor transmission, the smoke method and the cage method, both of which were described in Doolittle's book on queen-rearing published more than a quarter of a century ago." The two methods referred to date back nearly 200 years by record, and how much before that I do not know. The smoke method as there described was often given in the press years before Mr. D.'s book was written, much on the subject following the publication of Simmins' "Direct Introduction" in 1882, which was seven years before Mr. D.'s book was published. Mr. Hand, I fear, is not up on the history of the art.

Coupled with the confusion caused by mixing old ideas or others' ideas with my instructions is also the difficulty some people have of following instructions. In the bee world I believe no small part of this is due to the carelessness of expression and use of terms found in the bee press, something which Dr. Miller has been combating for years, but to what purpose? Read this from the editorial page of the October American Bee Journal: "A reasonable amount of lower ventilation and a heavy cushion of *absorbents* preventing drafts but allowing the *escape of moisture* as does a woolen blanket over a man's body, etc. (my italics). Is comment necessary? Carelessness of expression begets a looseness of interpretation, and the habitual reader of such writing is prone to give his own views to the subject in hand and fail to get the author's no matter how carefully expressed.

If you are going to try a thing at all try it as the author gives it, and be sure you understand his method. *Afterwards* put on as many of your own frills as you choose, but don't reverse the order and blame the author for something he did not say.

Mr. Byer failed because he used too much smoke. Had he taken into account the effect of varying quantities and qualities of smoke on bees he would probably not have made the error.

The cause of Miss Wilson's failure is not so obvious, but I am willing to venture the assertion that either she did not get the bees into a state of distress—choky smoke plus close confinement—or else the bees were in more or less of a disturbed condition from getting the old queen out. I say these things advisedly because I know that Dr. Miller's bees are "fighters" and his hives are not smoke tight.

Others, like Mr Hand, confuse my method with the older smoke plan, and so fail to follow the newer details.

And right here for the benefit of those who fail with my way as they use it, or who fail with the old smoke plan, let me call to their attention a law of bee life known 150 or more years ago, and cited by Langstroth in 1853, that *twenty-four hours* after a queen is removed from a colony another may be run in with scarcely any precaution whatever, and her safe acceptance is assured.

Now let me make a suggestion to beekeepers in general, *study the behavior* (*actions*) *of the bees*. Moses Quinby was a marvel at it, and had his book instead of Langstroth's been spread as the latter's was, we would have seen a much more advanced state of commercial bee culture than now exists, and this is no reflection on Mr. Langstroth. Quinby was the father of commercial beekeeping. He did with box-hives all that many a big beekeeper accomplishes today with all the modern appliances. He was able to do much because he knew much, and furthermore he possessed a wonderful ability to analyze conditions and reason back from effect to cause. Also he was able to impart this information, and to some extent his skill to others.

Langstroth also knew much about the bee, but his book being primarily an exponent of his hive, led the readers away from a study of bee actions to appliances and manipulations, a condition which Mr. Langstroth would have been the last one to desire could he have foreseen it. Let us study Quinby, re-read Langstroth, and then turn to the bee and see how much more we have to learn about her.

Providence, R. I.

["Carelessness of expression" as mentioned by our sarcastic contributor is indeed one of the things most combated by our experienced coworker, Dr. Miller, and I owe him thanks for many criticisms which have helped me to overcome the difficulties of a language which is not my mother tongue. So upon reading the above satire, I at once referred the matter to him, for his opinion as to what was the nature of my error. He replies: "I have studied over the passage that A. C. M. cites, but cannot make out what he refers to." Is comment necessary?—Editor]

Glucose Again

BY DR. A. F. BONNEY.

I PICKED up an article in a daily paper regarding a book written by one "Doctor" Cutler, secretary of the American Manufacturers' Association of Products from Corn. He was formerly Dairy and Food Commissioner of Missouri, and it recalled to my mind recent attempts to advertise honey, and to show honey producers what we are up against when it comes to selling our goods. I quote from it:

The corn product people calmly assert that the book has "been accepted as a text," but neglects to state by whom, but probably by the author, "and the company is sending them out free to schools that ask for them. Already 100,000 copies have been distributed, and the Chicago office is kept busy sending them out."

Giving the reader a touch of chemistry, which is an unopened book to nine hundred and ninety-nine out of every thousand persons, he says: "When some scientist, one of these days, discovers how to take the extra molecule of water out of corn sugar, that makes it differ from cane sugar, the beet and cane men no longer will need to fight each other over tariffs, for sugar will be very cheap. Every corn field will be the source of tons of sugar." Just two molecules of hydrogen and one of oxygen is all that lays between glucose and the ruin of the honey industry in the United States, for with sugar at 2 cents a pound the sale of honey would undoubtedly fall off.

The article goes on: "I wonder if many persons realize that there was made in the United States last year 800,000,000 pounds of corn syrup." (Glucose.) "The book, 'Corn and Its Products,' reveals the great uses of the corn products. It is shown that 90 percent of the candy has glucose or corn syrup in it."

Eight hundred million pounds of glucose. Eight pounds for each man, woman and child in the United States. The "profits" on honey will, as a rule, represent merely pay for a man's time a few weeks in the year. The price of "corn syrup" was arbitrarily raised as soon as the United States Pure Food people allowed the manufacturers to mislabel "Glucose" "Corn Syrup." The profits are something that approaches highway robbery, and they can well afford to send out books.

This brings up the question again of advertising honey. Can a man who produces one, two or three hundred dollars worth of honey afford to spend even 5 percent of his income in advertising? Of course this is a small amount of honey, but there are, I am sure, more men in the United States who produce less than $400 worth of honey than there are who get more. Dr. Miller once made a guess to the writer that there were but about 200 professional beekeepers in the country, and while it might be hard to find out just how many there are whose principal income is from honey, the fact remains that the annual consumption is about 25 cents worth per capita. It stands to reason that there is but little margin in this to send out books, and the worst about it is that for the most of the year there is little or no honey in sight. Honey should sell all the time as does sugar, but for some strange and unaccountable reason we are expected to get rid of our crop at once, leaving the field to glucose messes the rest of the year.

We cannot advertise all the time because we have not the honey all the time The Karo Kusses have glucose all the time, and are increasing the demand all the time. If the books they send out cost 5 cents each, the 100,000 they mention represent an output of $5000 They will no doubt send out $50,000 worth before they quit. Karo sells for about 5 cents a pound, in cans, and that means about $40,000,000. There are no crop failures, no bees to die, no several "grades" of the stuff, no short season for sales, and because of this they can afford to pay out a fraction of one percent to advertise their wares.

The writer has made a close study of advertising, and has decided that there

THE ITALIAN VERTICAL MOVABLE FRAME HIVES.— Part of the Visconti apiary.

is no rule in the art to apply to different beekeepers. One man produces a ton and sells it locally as best he can, another peddles, the next man trades with the local stores, some buy machine-made advertising leaflets, some use post cards. The great big producers depend upon the commission men, the bakeries, and an ad in the bee journals. Every man is a law unto himself, and I suppose it will always be so.

I believe in short, snappy ads, and because of it, and to reply to scores who write me, I am going to suggest that the bee journals put on the market little stickers, say 2 inches long and ½ inch wide, printed in full face, glaring red letters,

EAT HONEY

That is all. Let them be gummed. They can be sold, if orders justified printing them by the million, at from 30 to 50 cents a *thousand*. What! I get a fine "SHAKE THE BOTTLE" label, white letters on red ground at about 50 cents the single thousand. Let every beekeeper in the United States use 5000 to 10,000 of these, sticking them everywhere, and we can pretty nearly do a national advertising stunt. I am known as the "Eat Bonney Honey Man" for a hundred miles in all directions, but I'll take and use 10,000. Who is next? Don't all speak at once.

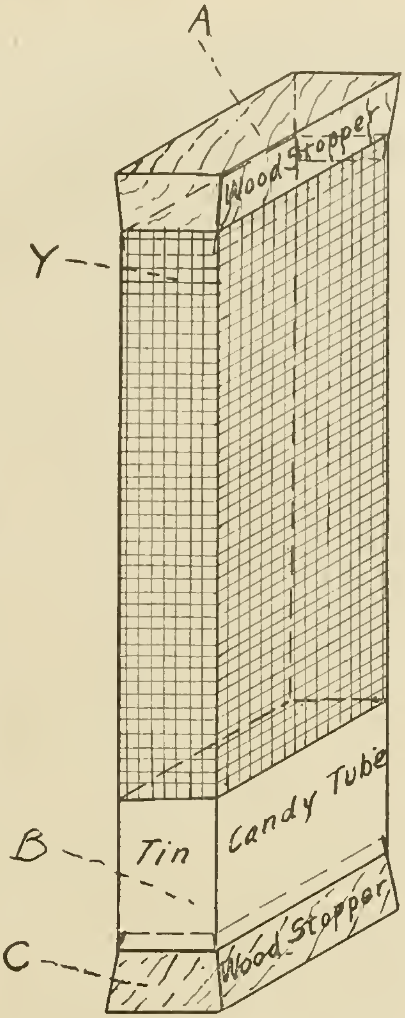
Buck Grove, Iowa.

[Dr. Bonney's suggestion is good. These labels can be furnished on gummed paper, printed in red, for 35 cents per thousand, postpaid. If our beekeeping friends desire to try them, we can easily supply them. Every one knows the value of advertising by keeping the name of the article constantly before the public.—Editor.]

A Few Statistics on Queen Superseding

BY DR. BRUENNICH.

THIS year, my eldest son, a very able beekeeper, and I have superseded by different methods, some 40 queens. The circumstances were exceedingly unfavorable, I dare say as unfavorable as possible. We had a wonderful April, with a crop of cherry-bloom honey, but May, June, July and even August were unusually rainy. My average crop, per colony, of extracted honey, was only 5 kilos (11 pounds), and in August the average supply of honey in the brood-chamber was 3.3 kilos. Thus and worse it was in all Switzerland this season. A great many colonies starved, and many have given no crop at all and have almost no supplies. So it is easy to understand that the humor of the bees was such as is perhaps unknown in America. This explains why relatively many queens have been killed or mutilated. Had I your circumstances of honey flow, perhaps I would not have lost a single queen. The *odor theory* alone can explain to me the ill success, as I will try to prove in the end of my article. As a general rule it is better to introduce a queen in July than in August, in June better than in July, and in May better than in June. The more brood the colony has the better we succeed.



Wire Tube Cage for Queen Introduction

I adopted the following methods:

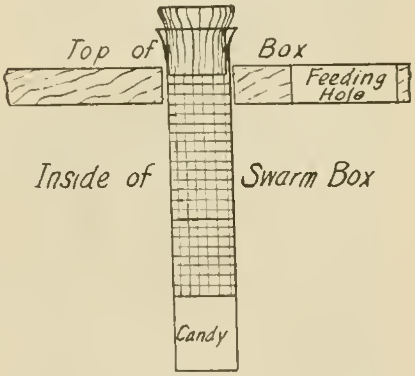
1. *The swarm method.* A, for superseding. The bees of the colony, dequeened, are shaken into a swarm-box. The brood-frames are given to other colonies for nursing. The swarm is fed, and after some hours I give, through a hole in the honey-board, a queen in a tube of wire-cloth closed above by a cork and below by a cylinder of candy. The swarm-box is placed in a quiet, dark room for 36 to 48 hours. Generally the swarm will build a little comb which the queen will fill with eggs, which is always a good sign. In the evening the swarm is shaken again in its hive where I have replaced the combs of the colony.

For feeding I use a simple cylindric honey tumbler, closed with cheese-cloth, double.

B, for establishing a colony. From different colonies I form a swarm in the swarm-box as above. The swarm is then shaken into a hive with comb foundation.

2. *The smoke method*, after Arthur C. Miller. As a rule, I let the queen fast for 20 to 30 minutes, for I believe that the success is surer.

3. *The cage method.* This is a method devised by my son and myself last year. We use a square tube or cage of wire-cloth, about 1½ inches wide, ½ inch thick, and 4½ inches long. One end consists of a 1½ inch tube filled with candy. Both ends are shut by a wood stopper. The figure will explain the little instrument. From the dequeened colony we pick a dozen or more bees from the alighting-board, by holding the cage at B with the right hand and the stopper A with the left hand and pushing the open cage along, on the board where the bees are congregated. Closing it from time to time, the bees will go towards the candy, when the operation may be repeated until we have enough. Then I plunge the end of the cage with the bees into water about a minute, agitating the cage. When the bees are wet enough one can easily get the queen into the cage and no bee will be aggressive The cage with bees and queen is now put on the top-bars of the brood frames, removing super combs if necessary. Late in the season we use an empty super over the brood-chamber. So the behavior of the bees toward the new queen can easily be observed. If there are many bees on the cage, and they are restless and angry, they have a tendency to ball the queen, which, of course, they are unable to do. If there is only a thin cover of quiet bees over the cage, the matter is all right I leave the tube as long as seven days on the frames, and even up to ten days, but not longer, and then I examine all brood combs minutely for queen-cells which I destroy. Should the behavior of the bees be kind, I run a match through the tube at Y, and hang the cage perpendicularly between two combs containing brood after having removed the wood stopper C. In about 90 percent of the cases there will be queen-cells; if there are none, it is always a good sign. Once I overlooked a queen-cell, but after a few days a dead young queen was found on the alighting-board and all was well.



Dr. Brunnich's Queen Cage

4. *The meal method* is a proceeding where the cage method is combined with the meal. I begin as in No. 3, but can release the queen earlier, perhaps after four days. I also adopted this method when I was not sure that the queen would be accepted. After

the four days I take out all the frames, destroy all queen-cells and sprinkle meal successively upon bees and frames and shake the bees back into the hive. On one of the frames, without bees, I put the queen and continue the process.

5. The saltpeter method was employed by me in cases where I had to do with a very resistent colony. It is simple. I stupefy the whole colony, in the evening, with saltpeter fumes and simply insert the queen from above. This method is somewhat rigorous.

Now for the results on 41 colonies:

Summary.	Accepted.	Killed.	Total.
1. Swarm method......	7	3	10
2. Smoke method......	7	4	11
3. Cage method........	11	0	11
4. Meal method........	8	0	8
5. Saltpeter method....	1	0	1

Aside from this reckoning there was one colony, No. 23, on which every method failed as shown below.

We see that the smoke method has given the least favorable results, therefore I abandoned it and have not the intention to employ it again. I do not doubt that under favorable circumstances it is as good as any other method (not better), but if I wish to be sure, I shall employ the *cage method.*

I do not like the meal method because it gives so much dust. The swarm method is too complicated except for superseding.

What now are the conclusions of my experiences? I think they prove almost evidently the *smell theory.* It explains the excellent effect of my method with the wire cage; in so long a time as 7 to 10 days the queen has certainly acquired the odor of the colony and is no longer a stranger. But it explains as well the ill-success of the two other methods. There the bees are taken by surprise; they accept the foreign queen in the first moment, but woe to her if any disturbance arrives! A single robber in the hive excites the bees and makes them vigilant. They recognize the queen as a stranger; they ball her or she is stung, and will soon be dead or mutilated. I should like to ask a smell-theory adversary to explain the following experience which my son made some years ago: I had devised a new method of superseding, by daubing the queen with a weak watery extract of bees (without abdomens), to cover her own odor, and we had indeed generally good results, but not always because the odor of the bee extract vanishes, and by and by the personal odor of the queen comes forth again.

He had a glass hive which had a fertile queen and which he dequeened. In the evening he gave this colony, at once, two young queens daubed. They were well accepted and could be seen quietly marching on the comb on the following day. Curiously enough, the queens avoided meeting each other and were never on the same side of the comb. On the second day my son was curious to see whether the bees would still again accept their own queen, and he let her run in in the evening. Of course all three queens were marked distinctly and differently. The next day both foreign queens were dead and their own queen walked majestically on the comb. The bees had recognized their own queen, and I think certainly not at her dialect or visage, but at her *proper odor.*

May I give some details on the special case mentioned above? The colony No. 23 was extremely resistent. I dequeened it June 11, in the morning, and gave it a young queen with the smoke method. She was killed, and after having destroyed the cells I formed of the colony a swarm, June 28, to which I gave another queen. After some days the queen lay dead before the entrance. July 6, I stupefied the whole colony with saltpeter and gave another queen. July 7, I noticed that the colony was excited. I opened the hive and found the queen balled, but still healthy. As she was a valuable queen, I took her off at once and gave, with meal, an old queen 3 years old, knowing that old queens are generally easily accepted. July 13 the queen was balled and there were no eggs. I put her into a wire-cage, shook the whole colony into a swarm-box, which I plunged for half a minute completely into the lake and gave them the queen (a new method highly recommended in one of the last numbers of the Munichner Bienenzeitung). The swarm was put back into the hive. July 16 I saw that the queen had some paralyzed legs (stung?). July 17 she was lying on the alighting-board still living but very feeble. Nevertheless I gave them, with meal, another queen, the same day (this was the fifth queen), and fed them milk and syrup in the evening.

July 19, the queen was balled in the center of the entrance; she had a lame leg (stung). I shook again the whole colony, covering the bees with an abundant spray of water and gave the queen again. July 24, no eggs and no queen, colony quiet. I gave two frames with very young brood, and in the evening the colony was very restless. Now, do what you will, thought I! August 12 there was a young queen, but the season being so late I took her away and gave about two pounds of bees from other colonies, also a fertile young queen by the swarming process (the sixth queen). August 20 found no eggs, but larvæ 4 to 6 days old, no queen. The colony was exceedingly restless while I was examining it; therefore, I thought they might accept a seventh queen. I shook the whole colony, sprayed the bees with water containing a little extract of lemon and put in another queen who had a lame leg, on a comb containing brood. She was not attacked, and was finally accepted and is still now in the hive where she has made nice brood. That is the history of an anarchist colony, isn't it?

Zug, Switzerland.

[With the above article Dr. Bruennich has sent us a detail of each introduction, with dates, etc. We did not insert this because it would have made the article too long, and it is very comprehensive anyhow. His statistics are very interesting. His trials are of value because the results are so carefully noted. But he is in error in thinking that we, in America, always have good honey weather.

The cage method which he gives is original and differs widely from the cage method used here. He inserts bees into the cage from the colony to which the queen is introduced. We leave the queen, without bees, in the introducing cage, relying on the bees to feed her, if there is no candy, and they always do, unless they are so destitute as to be unable to feed their brood. In times of scarcity it is thought indispensable to feed the colony to which a queen is being introduced. But we find 48 hours sufficient, in most cases, to acquaint the bees with their new queen. As Dr. Bruennich says, their behavior on the cage usually tells how they feel towards her. We release her either by letting the bees eat through the candy to her, or if there be no candy, by putting a chunk of honey in place of the stopper. It seems that the less a colony is disturbed after releasing the queen the less danger there is for her. "A single robber in the hive excites the bees." We have seen bees ball a queen several days after her introduction, owing to disturbances. Hand, in the October number, page 348, gives similar advice to that of our learned Swiss friend.

Imported queens, coming to us from Italy, with the strong and strange smell of heather honey, were much more difficult to introduce than our own queens. Likewise, a queen which has traveled for several days and is fatigued, is less apt to be accepted than a young laying queen taken from a nucleus in our own apiary and inserted at once in a neighboring colony. That is another reason why, aside from the advantage of knowing that we are breeding from our best honey producers, home-reared queens are the most satisfactory.—EDITOR.]

Long Idea Hive

BY J. E. CRANE.

I WAS much interested some time since in taking care of a good sized yard of old-fashioned hives with old style frames that I had supposed were long since discarded, as well as a solar wax extractor that I thought was going out of use.

Yet here I found in southeast Florida, in the yards of O. O. Poppleton, the "long idea hive," or was it called "the new idea hive" more than 40 years ago? I remember making and using some of them 45 years ago this last season. Instead of making the hive 2-story as now generally practiced, it is made to be used only as a 1-story hive, and some 3 feet long and just wide enough to take in a frame of any given size across the hive. His hives are made about 13 inches wide and 13 inches deep, and from 36 to 40 inches long, inside, and hold 20 or more frames of the size and shape of the old American style of frame, about 12 inches square, which, he says, is better than any other for this style of hive. I had supposed so deep a frame impracticable, as the depth would result in the killing of many bees in handling them; but as he has them constructed, I find they can be handled as fast and as safely as the ordinary Langstroth frame; indeed, I believe even faster.

The lower bar of the frame is set in a slot in the lower end of the end bars, and allowed to project ¼ inch beyond the end bars, so that in lowering the frame into the hive there is always a bee space between the lower corner of the frame and side of hive. A staple would answer the same purpose. Then the top bar is wide enough to come together, forming a closed frame on top, which keeps the bees from depositing propolis around the ends of the top bars and sticking them up. The comb is attached to the top bar near one edge, while the other edge of the top bar projects over the bee-space between the combs. Each top bar has two small slots cut in it, opening into the bee-space between the combs below. These slots are covered with narrow pieces of ½-inch boards.

His hives also have a shallow telescopic cover that protects the frames from the storms and the excessive heat of summer. An entrance 12 inches long by ½ inch deep in the bottom of the brood-chamber midway from each end gives the bees all the ventilation they receive. A loose-fitting following board to hang at the side of the frames completes the hive. I should have stated that staples near the bottom of the frames keep them the proper distance apart, at their lower end.

Now for the working of this hive. The brood is kept near the center of the hive, close to the entrance, while the end combs are for surplus honey. He uses no queen excluders in them, for he believes the more room the queen has to lay in, and the more brood she produces, the larger the force to gather honey.

In opening these hives you have to lift the cover and then lift one or two of the narrow boards that cover the slots in the frames. Then it is easy to ascertain the strength of the colony. A little smoke through these slots in the frames drives the bees down into good behavior, with much less danger of being stung than where the spaces between the frames are all open. It is easy to move the frames aside, as the top bars come together, and there is no propolis at the end to hold them. Usually one or two frames are left out at one or both ends, and a division-board placed beside the comb, so any given frame can be removed from these hives about as quickly as from a hive of Langstroth frames, and far quicker and easier than from those containing Hoffman frames. The surplus is stored at each end of the hive.

In extracting, Mr. Poppleton only extracts from one end at a time, so that if the supply should suddenly cease the bees would not be short of stores. In the climate of Florida, combs must be stored on the hives to keep the wax moth from destroying them, and one of the great advantages of this hive is that you can readily get into the brood-nest at all times without removing a heavy super. I found in looking over such a yard with most of the surplus combs in, I could do it nearly as rapidly as I could 1-story Langstroth hives, much to my surprise.

Another advantage of these solid top bars is that in getting surplus comb honey the small slots, while large enough to let bees work through freely, would very largely prevent the so-called travel stain; but Mr. Poppleton takes his crop almost wholly by extracting. The idea of a solar wax extractor is original with Mr. Poppleton.

The climate of Florida is especially adapted to this apparatus for rendering wax; their January being about as warm as our northern June. While a solar wax extractor even in Florida does not remove all the wax from old combs, yet it is exceedingly useful to throw in pieces of comb or wax that are too small or of too little value to pay to melt with water by itself, yet can be saved in this way that would otherwise be destroyed by moths. But its greatest value comes as a combined wax extractor and capping melter. Mr. Poppleton tells me it is surprising the large amount of honey that remains among the cappings after all has drained out that will do so. He has sometimes secured a barrel of honey, through his solar wax extractors, from his cappings, which sold at same price as that from the honey extractor.

I have not written the above expecting these ideas will be adopted by others, but rather to show how one may use hives and apparatus very different from what we are accustomed to think the best, and succeed quite as well as we do, and perhaps even better than we would with our own hives and fixtures. It is also to show that to succeed and secure the best results one must think for himself and not follow blindly the lead of others, but adapt himself to circumstances and conditions with which he is surrounded.

Mr. Poppleton's hive and system of management are well adapted to the southern States, where extracted honey is produced, and would prove successful for this purpose as far north as the Ohio river by removing the surplus combs in winter and enclosing the brood combs within close-fitting division-boards.

Middlebury, Vt.

DR. MILLER'S ANSWERS~

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Reason for Poor Yield from One Colony

I have 5 colonies of bees Four colonies did well; 3 got 2 supers filled and one 3 supers We have one that filled the brood-chamber but never started in the super It is a colony from last year What can be the matter with it? MINNESOTA.

ANSWER.—Without knowing more about it it is hard even to make a guess. If it had the same chance as the others in every respect, the likelihood is that it had a poorer queen.

Bees Specking Clothes and Bothering Neighbors

1. Will bees speck clothes after they have had their cleansing flight in the spring: if so under what conditions?

2 Will a high board fence prevent bees from bothering neighbors?

3 How far will bees go from the hives in spring and speck clothes? IOWA.

ANSWERS.—Sometimes they will do so after having been confined to the hive for several days, but never to the same extent as in the general cleansing flight in spring.

2. It will help, and may prevent it entirely, something depending upon the lay of the land.

3. I don't know Most of the bees empty themselves close to the hives, so that clothes within a rod would be badly soiled. As nearly as I can recall, I should say it would not be a tenth as bad 5 rods away, with little trouble 10 rods away, while a very few bees might fly 15 or 20 rods away before discharging their feces.

The clipping you enclose, saying that bees "soiled washings and destroyed fruit every day in the year that they were out" is absurd Even if bees were bad enough, it is absurd to think of fruit being on hand from March to November, or of washings being hung out every day of the week. The truth is that only once in the year is there any serious trouble with clothes hung out, and bees never break the skin of sound fruit, only emptying out what birds or wasps have first bitten, and which would spoil anyway.

A Good Breeder—Requeening in the South

1. What are the qualifications of a breeder in regard to age, size color, number of eggs laid in certain specified time, etc.? Is there any standard?

2 In testing, how long should I hold the watch on her to figure out a correct test?

3. During the laying season, does she lay both day and night?

4 Here in the South, where we have to breed up for two or three flows each season, and you only have to breed up for one flow, should we not requeen each season?
TENNESSEE.

ANSWERS.—1. I don't remember that I ever heard of any standard, So far as I know every one has his own standard. The chief thing is that the worker progeny of the queen should excel as storers This, you will see, cannot be set down as so many pounds exactly, for seasons vary, and 200 pounds might be no better one season than 20 in another. The only thing you can do is to compare her work with that of others in the same place. You can hardly tell what a queen will do until she is a full year old, and not always then. Size does not cut much figure; a very small queen sometimes lays more than the average. Neither is the most prolific queen always the best.

2. I don't know; I never heard of testing a queen in that way. Even if you had a certain time given, it would have to vary according to time of year. In the height of laying she should hardly fall short of 2500 eggs in 24 hours; at least that would be my guess. She might double it.

3. Yes.

4. Queens keep laying here throughout the season from early spring until fall. They hardly do any more with you. If you want my own personal view in the matter, I would let the bees do their own superseding whether there were five flows or only one; only I would supersede any queen that was not satisfactory.

A Beginner's Questions

1. I am planning on keeping bees in the spring. I have decided on 3-banded Italians what do you think of them?

2. I am thinking of starting with two or three colonies, run them for comb honey until I get started, then change to extracted honey by using the 4x5 inch section, so that when I make the change I can use the same supers by putting in shallow frames instead of sections. Do you think this a good plan, or do you think it would pay to purchase an extractor and outfit for only four or five colonies?

3. Which will be cheaper and easier to run for, comb or extracted honey? I only have a few hours per day to work with bees.

4. What do you think of the 10-frame "cypress" hives? Are they as good as white pine?

5. Which super is best for extracting, the deep or shallow?

6. Would you advise me to paint the hives?

7. What hive is best, the dovetailed or chaff double walled?

8. What make of extractor do you recommend?

9. How many yards and colonies have you at present?

10. How much honey did you produce this season, and what method did you use?

IOWA.

ANSWERS.—1. All right.

2. It is generally considered that it requires more skill to produce comb honey than extracted, so it seems hardly advisable to begin with comb unless you expect to continue it. If you expect to extract later, better have all the experience in that line you can have from the start. Even if you should not extract enough the first season to pay for an extractor, it will be all right for another season. So I should advise that you begin with the extractor.

3. Most likely extracted.

4. Probably they are as good; some say they are more durable.

5. The shallow.

6. I don't believe it is best for me; but the majority think it better. Painted hives look better and last longer; but I think unpainted are better for the bees.

7. What is best for one is not always best for another. For the majority the plain dovetailed is preferable.

8. Something depends upon size of apiary and other things. I haven't had enough experience to advise.

9. One hundred colonies in one yard.

10. I don't know how much; likely in the neighborhood of 70 pounds per colony. The entire method would take quite a book to describe; you will find it in "Fifty Years Among the Bees."

Dry Sugar in Miller Feeder

1. How much dry sugar and how much water would be necessary to make 10 pounds of food in accordance with your suggestion on page 312, at the foot of third column (dry sugar in Miller feeder)?

2. Would October be too late to feed that way?

CONNETICUT.

ANSWERS.—1. I think it will not be far out of the way to estimate that 2½ parts of sugar to one part water (either pints or pounds) will make a syrup about the strength of honey. If that be correct, then 7 1-7 pounds of sugar and 2 6-7 pounds of water would make 10 pounds of syrup. But it would not be practicable to feed in the manner to which you refer, and put in at one time the exact amounts. On page 312, I referred lightly to the plan without going into particulars. I said, "I'd set a Miller feeder on a hive, pour into it dry sugar and then put in water." Going into particulars, suppose I wanted to give a certain amount of sugar to a colony; I would put that amount, dry, into the feeder; and then I would pour water upon it. No need to be particular about the amount of water; if a large amount of sugar were in the feeder, there would perhaps not be room for a great deal of water, and so there might be less water than sugar. If plenty of room in the feeder, then more water than sugar would be given, perhaps 2, 3, 5, or more times as much water as sugar. In any case, whether little or much water, I'd look in a day or two, when likely I would find that the bees had taken all that was thin enough, and if some wet sugar that they couldn't take was still left in the feeder, I'd pour on it an indefinite amount of water, and this I would continue until all was dissolved and taken. It might take only a day if enough water were given first time, and if only a small proportion of water were given it might need replenishing several times and take several days. Now suppose I wanted to give 10 pounds of sugar and 4 pounds of water, making 14 pounds of feed, and should give it all at once. The bees would begin promptly on the sweetened water that drained through, and before all the sugar had dissolved they would have all the liquid sucked up, leaving wet sugar still in the feeder. So you see that wouldn't work. The idea of the whole thing, and the beauty of it, is that you don't need to be particular about the amount of water, but add successively so long as needed.

2. Yes, August, or first half of September would be late enough. In October syrup of full strength should be dissolved before put in the feeder.

Drones—Placing Super

1. Please tell me what to do and how to get a virgin queen mated after all drones have been killed by the bees?

2. Could I induce the bees to rear drones? I have lost two colonies by not having any drones. I know I should have ordered a queen, but at the time I could not.

3. If I cut out the patches of drone-comb and fill in with worker-comb, would the bees tear it down and draw drone-comb?

4. I am running for section honey, would it be advisable to put a super under the brood-chamber? They have a tendency to work down, and it looks to me like it would work. Would I have to put on an excluder?

MISSISSIPPI.

ANSWERS.—1. I don't believe you can do it.

2. I don't believe there is one chance in fifty that you could get bees to rear drones after they have killed them off in the fall. But it should be added that although I don't believe you can get queens mated after drones are killed off, yet all drones are not always killed off as early as you might suppose; and even after you no longer see any there might be a few left by which virgins might be mated.

3. No.

4. You would need an excluder to keep the queen from going down, and even with an excluder the sections would be so dark that you had better not try it.

Size of Standard Frame—Transferring

1. What are the dimensions of the 10-frame standard hive?

2. Which is best, to transfer bees from old hives after or before they swarm?

MISSOURI.

ANSWERS.—1. The Langstroth frame, which may be called the standard, is 17⅝ inches long and 9⅛ deep, outside measure. To contain 10 such frames and a dummy, a hive should be 18¼ inches long, 14⅞ inches wide, and 10 inches deep, inside measure. Many hives are made narrower, no room being allowed for a dummy, but I think the tendency is toward the wider hive.

2. More and more the preference seems to be for transferring after swarming.

Swarm of Yellow Wild Bees

I have a large swarm of yellow wild bees would it pay to requeen with a pure Italian queen, or would it be better to get a swarm of Italians? Would they be worth $12?

MICHIGAN.

ANSWER.—If a colony in my apiary should swarm, and the swarm should lodge in a hollow tree, the bees would then be called wild bees. If I should get them out of the

THEO. GEHARD'S APIARY AT BUNKER HILL, ILL.

tree and put them in a hive, they would then be called tame. So you see that wild and tame bees are really all the same thing. If the workers have three yellow bands, they are Italians, wild or tame. If they are of good stock it will not pay to requeen, unless with better stock. I don't know whether it will pay you or not to get a colony of Italians; hardly, if you already have good Italians, unless you are anxious to increase your number immediately. Whether an Italian colony is worth $12 depends upon a good many things. It may be worth twice that under some circumstances, and half that under others.

Trying a New Thing—Diseased Colonies—Sugar-Fed Honey—Second Mating—Uniting

1. How would it do to supply the combs with water and flour in the early spring?
2. My bees had pickled or scab brood in one colony or the other all summer. Will they be very likely to have it next spring; if so, what treatment would you recommend?
3. If I feed sugar syrup and the bees store it in the combs so as to get it mixed in with the honey, might it be sold for pure honey?
4. Last May I purchased a queen with a one-frame nucleus. The workers and drones were pure; but the longer I had them the darker they seemed to get. The queens I reared from her seemed to be very pure, also the drones. Do you think she mated again?
5. I am going to winter my bees outdoors, simply putting an enamel cloth over the frames. Would you advise cutting a hole in the cloth to allow the moisture to escape? Will these cloths be all right? ILLINOIS.

ANSWERS.—1. The fact that it is not generally practiced is pretty good proof that it is not satisfactory. You are not likely to do any harm by putting water in combs, but if you mix flour with it there may be trouble in getting it out again.

2. They are not certain to have it next year because they had it this year, but if exactly the same conditions are repeated the trouble is likely to reappear. Do all you can to have strong colonies, with everything in best condition.

3. Any mixture of sugar syrup in honey bars it out from being sold as pure honey.

4. There are reports of queens mating a second time, but it is a rare occurrence.

5. A hole, or a number of holes, would probably be better, and there should be 3 to 6 inches of loose material as packing on top. Try at least one colony with burlap or other pervious material instead of enameled cloth.

Swarm Prevention

See article on page 310 of the American Bee Journal on "Controlling Swarming." The author says that he produces a new colony with just one frame "of brood in several stages" and the honey-gathering bees. I should imagine that the frame ought also to contain eggs, or how could a queen be produced?

The point I have in mind, is that I once asked you how it would be to control swarming by taking from a colony every frame having a queen-cell (no bees) and distributing a frame of comb or foundation. You answered that such practice probably would destroy the colony or weaken it enough so as not to become a surplus producer, but does not C. F. Greening, by his way, leave as the basis for a new colony much less than would be left by taking away only such frames as bees would make queenless on?

And is there not more depletion than by my suggestion in the ordinary shook swarming, when the bees have at most only one frame of brood and the rest all foundation?

As to my suggestion or notion, it would seem theoretically possible to deprive bees of the minimum, whereby just that is taken from them and just so much empty space regiven to induce desistence from swarming. Then practice to approach the theory as near as possible.

Aside of this—in giving a queenless colony a frame with queen-cell—may an uncapped one not be better than even a "ripe" one on the following line of argument. Experience seems with me to recommend the practice of putting into the hive-body to hold a swarm a frame with *un*capped brood. I read that the bees "never" desert such. If a swarm of bees is so well held by *un*capped brood, will analogously an "uncapped" queen-cell elicits more sympathy from the queenless bees than a sealed one? As good mothers like to take care of their babes, so bees might best like to "have a hand" in the rearing of their queen—to be? An uncapped queen-cell may also involve a suggestion ahead of a frame with eggs only, and so be better than either the latter or a sealed queen cell. SUBSCRIBER.

ANSWER.—Replying to your first question, as to how a queen could be produced from brood in several stages without eggs, it may be said that eggs are not at all necessary, since *queenless* bees seldom if ever start a queen from the egg, but from a larva less than three days old—usually, I think, less than two days old.

To your second question, whether C. F. Greening (page 311, September number, where he forms a colony from one frame of brood and the field bees of a strong colony) does not have a weaker colony than you would have "by taking away from a colony every frame having a queen-cell," I answer yes.

To your further question whether a shaken swarm is not weaker than said colony having its brood with queen-cells taken from it, I again answer yes.

The gist of the whole matter, however, lies in the implied question as to how I reconcile that with the answer you say I made formerly, that taking away from a colony every frame having a queen-cell would probably destroy the colony or weaken it beyond producing surplus. I don't reconcile it—can't. The statement attributed to me is nonsense. You do not say where that answer is to be found; but I cannot imagine how I could have made such an answer, for I have been a teetotaler all my life. I really wonder if I made exactly that answer to exactly that question.

Your theory that just enough depletion should be used as would prevent swarming is excellent. In actual practice it is hard to carry out. Colonies differ; seasons differ. I have known the removal of two frames of brood to make a colony give up the notion of swarming, and I have known the removal of nearly all to have no apparent effect. Breeding persistently from stock least given to swarming may help out.

I don't know for certain, but I have doubts that bees will be better held by uncapped than by capped brood. I have known bees to remain faithfully clustered on a piece of sealed brood at the hive-entrance in a pelting rain; I never knew them so faithful to unsealed brood. Many a time I have known them to empty out unsealed queen-cells when sealed queen-cells were left undisturbed. At any rate, I don't see the bearing in the present case. What we are after is not to keep the bees from absconding, but from swarming, which is a very different thing. And the presence of a queen cell, either sealed or unsealed, whatever it might do toward keeping a colony from deserting its hive, would in many cases be the very thing to make it swarm.

How to Prove Section Honey is Pure?—Watery Looking Honey

1. Some dealers tell me that I have been feeding my bees sugar syrup. Others ask me if it is machine made. I would like to be able to prove that my nice white comb honey is pure honey produced by the bees, but as I am not very well posted on honey yet, I do not know just what what to say. I have heard it said that somebody somewhere offered $1000 for a pound of machine-made honey. Who was this man, and is the offer still good, and has he got the $1000 yet? The trouble is that many persons believe that clean white combs without stains are machine made, that pure amber honey is colored, and if it is clear and white it must be nothing but sugar and water.

2. What is the cause and remedy of comb honey having a water soaked appearance? The cappings lie right on the honey. The honey tastes about the same as any other, but it does not look as good as where the capping is pure white. I have a colony that produced over 100 pounds more this season than any of the others, but a good many of the sections had this watery look.

3. I am using the 4x5x1⅜ sections, but in order to get a heavier section when filled, I have been thinking about changing to the 4x5x1½. Do you think this advisable? My 1⅜ sections weigh 13 and 14 ounces, including the wood. I would like to have them weigh at least 15 ounces net, as people expect a pound package when buying. Which is the most used by beekeepers through this country, the 4x5x1⅜ or the 4x5x1½?
WASHINGTON.

ANSWERS.—1. An argument that I think was first advanced by C. P. Dadant ought to be enough to convince any one with sufficient reason that section honey is not machine made. Take any two sections of honey and place them side by side. If machine made they would be exactly alike, whereas there will be no difficulty in pointing out differences that will knock out all idea that they are made in the same mold, and establish clearly that each section is an individual job, worked out by the bees. Pop-holes in one will be clearly different from those in another, and variations of cells will be evident. You may also show a section just as it is when you give it to the bees, and that will be convincing to most men that the bees do the rest.

The offer of $1000 for a section of honey made without the aid of bees was first made by The A. I. Root Company, and is still good, with many thousands of dollars back of it. No one has yet captured the reward. The same offer has also been made by the National Beekeepers' Association.

2. You have answered the question yourself, when you say, "The cappings lie right on the honey." In other words, the bees fill the honey right up to the capping, leaving no air-space between the capping and the honey. The remedy is to change the queen, or else use the colony for extracted honey. Any section may also acquire the same appearance after it is taken from the hive, no matter how white the bees made it, if it is put in a damp place. Honey is deliquescent, attracting moisture from damp air, and should be kept in a warm, dry place. Where salt will keep dry is likely a good place to keep honey.

3. You may as well put it down first as last that you can find no size of section that will always weigh exactly the same when filled with honey. No, nor anywhere near the same. The weight will vary in different seasons, at different times in the same season, and with different colonies at the same time. I venture the guess that your colony that made watery sections made at the same time heavier sections than other colonies. In my crop of 1914, I found whole cases in which the average weight of a section in one case was more than two ounces above that in another, and I think two individual sections might have been found with a difference in weight of six ounces. You can be just as honest selling sections weighing ten ounces as you can selling those that weigh a pound or more. Only

be honest about what it does weigh. The new interstate law requires that each section have stamped upon it the minimum weight of the honey actually contained in it. not counting in the weight of the wood in the section, which weighs about an ounce. If you can stamp yours as containing nothing less than 12½ ounces each you will be doing wonderfully well.

I don't know whether the majority of the 4x5 sections are 1⅜ or 1½. The great majority of sections, I think, are 4¼x4¼x1⅞.

Rearing Brood Without Excluders

1. Many of your large bee-keepers rear brood into the upper stories in order to make the bees take to the supers, and some work without using queen-excluders. Do they not find the pollen very troublesome in the combs? I have tried both methods, but find the pollen a nuisance when uncapping as it clogs the knife.

2. Does C. F. Greening (page 310, September number) use a queen-excluder when practicing his non-swarming system?

ENGLAND.

ANSWERS.—1. Generally there is no need to put brood in the surplus apartment, empty comb being sufficient attraction for the bees. But if brood should be put in the super it would be quite important to use a queen-excluder. As to pollen troubling the knife, it will hardly do so unless combs are quite irregular, so that you have to cut deep in places, for I think cells are never entirely filled with pollen, an empty space being left which may be filled with honey.

2. No. He will be glad to have you write him direct concerning his system.

REPORTS AND EXPERIENCES

A Kentucky Letter

We have had a dry season this year, but a bumper honey crop, which resulted largely from the copious rains of April. I harvested some 75 pounds per colony of No. 1 chunk and extracted honey from basswood, berries, persimmon and other wild bloom—clover being a failure.

Bees are still storing from the fall flow at this date, Oct 15. Almost all colonies have already stored enough for winter. We have a good market for our honey. I dispose of what I produce at 18 and 20 cents per pound.

I have been keeping bees the past 10 years, and have found nothing that will beat the single-wall hive with winter cases, with a 2-inch space between hive and case, packed tightly with forest leaves, and absorbents above the brood-nest.

Gimlet, Ky. FREDERICK MANK.

Honey High in Stores

The honey crop was pretty fair in Carson Valley, Nev., and the quality good, white and sweet clover. The market is dull and prices low here in California. I bought two little glass jars of honey in two different stores, and I had to pay 25 cents for each. It was not a No. 1 grade of honey. How does this compare with other things? I said to a friend, why don't you eat honey, it is healthful? Don't the children like it? He answered: "Yes, I know it is healthful. and the children like it so well that they eat so much of it I cannot afford to buy it because honey is so high." HENRY VORWERK.

San Francisco, Calif., Oct. 25.

Will Have to Feed

The past summer some colonies did not gather 10 pounds of honey, some 24, and some hardly enough to keep them, and I will be obliged to feed when the weather gets cooler, I think. There are very few bees kept around here. There are several patches of alfalfa, and a great deal of alsike is grown for hay, and plenty of sweet clover on the roadside not far from here. Bees should do well AUSTIN POWERS.

Sterling, Ill., Oct. 15.

Caucasian Bees

I was interested in what was said in regard to the color of Caucasian bees. I have succeeded in getting a few queens over from the Caucasus, that were a dark bronze themselves without any gold or coppery threads, and their worker progeny was a steel gray; then some that I imported showed coppery yellow threads around the body, and invariably their worker progeny would show about one-tenth of one percent of bees that would have one or two yellow bands.

That they were pure Caucasians could not be disputed, but evidently they were mixed with the yellow-banded races that are mentioned. I am adhering to the real gray strain as being distinctive of the true mountain bees of the Caucasus, and they are more evenly tempered and do not at any time cluster out, like Italians. In hot weather, and where they have room on Jumbo frames, (I prefer big frames. I use for the brood-nest ten), they have never yet cast a natural swarm, and I have had a single queen to keep three of these hive-bodies full to overflowing of worker bees, and know what that means when there comes a big honey flow.

I enjoy very much the Editor's notes from abroad, and regret that he was unable to extend his trip into England.

CHAS. W. QUINN.

Beaumont, Tex., Oct. 18.

Bees More Numerous with Education

Bees in this section are in fine condition; brood-chambers full of nice clear sealed honey, and the steelweed is at its height of production. The frost is holding off late. Some colonies will store more than 200 pounds from the fall flow. We never had a case of bee disease in this part of Kentucky. Our only loss is with the let-alone beekeepers, such as queenlessness and a very light winter loss. Bees are getting more numerous since the owners study the anatomy and behavior of the bee. CECIL WHITT.

Gimlet, Ky., Oct. 14.

Light Flow

We had a light flow of honey. This year's crop will be short. F. F. GEORGE.

Fraser, Idaho, Sept. 28.

First Complete Failure in His Experience

I have 63 colonies and no honey this year. I have been in the business 10 years, and this is the first complete failure. I have been feeding to get the bees in good shape for winter. J. E. FRENCH.

Cainsville, Mo.

Fair Crop of Honey in Indiana in 1914—Top Ventilation

The November number of the American Bee Journal for 1914 shows that the passed season, almost in all parts of this country, was a poor one. While the southern part of Indiana is not an excellent locality for honey production, in spite of the excessive drouth the yield of honey is far above the average of other localities. The amount of extracted honey per colony for this season is 82 pounds, with a great amount of stores left for wintering. All colonies are supplied with at least 50 pounds of honey for winter.

We had here two heavy honey flows, the first from May 12 until June 20, chiefly from tulip poplar (*Liriodendron tulipiferum*) and persimmons, and the other in the latter part of September and in the beginning of October, from white asters and goldenrod. A the weather was very hot and rather dry during the last flow, white aster honey is of good quality and consistency, and bees ought to winter well on it.

In wintering bees on the summer stands with some kind of packing over the cluster of bees, I experienced repeatedly how important it is to give top ventilation. If there is not top ventilation the packing over the cluster, which should serve to keep the bees warm, will accumulate a great amount of moisture and may prove fatal to the bees. A slight ventilation on top will dispel all moisture and the bees will remain dry and warm.

Bees need fresh air as well as a human being, and if the packing contracts moisture it shows a deficiency in the proper ventilation. The top board must be raised just enough to allow the moisture to escape.

Spencer Co., Indiana. SUBSCRIBER.

Yellow Sweet Clover

All beekeepers are aware of the honey producing qualities of white blossomed sweet clover, which is due to the fact that it starts to blossom about July 1, when the white clover is waning, and keeps on blossoming continually until late in the fall. In consequence of its long tap root, which draws moisture from a considerable depth, nectar is secreted in the flowers during the dry period of the summer months when clovers have practically ceased blooming.

Few beekeepers appreciate the value of the yellow blossomed sweet clover as a source of honey production. It is different from most other clovers in that it will germinate and grow about equally as well one season as another. It germinates early in the spring when there is plenty of moisture, and its long tap root prevents its being affected by any dry periods during its growth. The yellow variety begins blossoming about June 1, and continues until about July 10. In localities where both varieties are grown, the bees are afforded a continuous flow of honey from early spring until late fall, and this flow is very slightly affected by dry weather conditions, which so often prove disastrous. W. M. BUDLONG.

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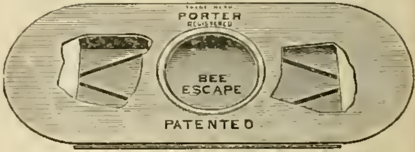

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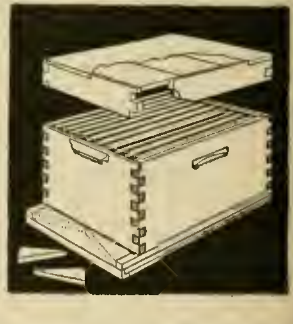

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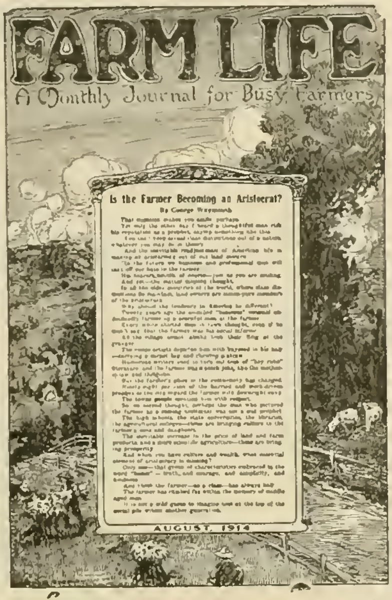
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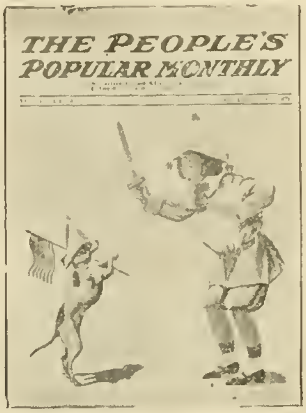

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CHICAGO, Nov. 19.—Comb honey is firmly held, all grades selling fairly well. The choice to fancy grades bringing 16@17c per pound, where the wood attached to the comb is allowed for. The amber grades range from 1@3c per pound less. There is no surplus of desirable grades up to the present time.

Extracted white clover, linden and water white sage sells at 9@10c per pound with other white grades ranging from 7@8c per pound. Ambers of fine flavor 7@8c per pound, with less desirable grades and flavors at from 5@6c per pound. Beeswax 31@33c per pound. R. A. BURNETT & CO.

CINCINNATI, Nov. 15.—There is nothing new to report. The demand for all grades of honey is uninteresting, and do not expect it to be otherwise, for it seems this is an off year. Comb honey is moving a little at $3.50 to $4.00 a case, according to quantity and quality purchased. Fancy white clover extracted honey from 8@10c a pound. Southern amber extracted has a black eye in the way of prices, for the reason foreign honey is being diverted into the United States market with orders to sell at any price. We have heard of sales as low as 3½c a pound, which is rather hard on the southern producer. Beeswax seems to be easier, while we are still paying 30c a pound delivered here for choice bright yellow free from dirt, it can be bought for 25c a pound.
THE FRED W. MUTH CO.

NEW YORK, Nov. 18.—We have really nothing new to report. There is a fair demand for comb honey, and the prices are ruling about the same as in your last issue. We have had a good deal of trouble with New York State comb this season, on account of its candying and granulating. Shipments which we received about a month ago are now candied solid, and are being returned to us by our customers It is the first year since we have been in the business that we have so much comb honey candied, and cannot account for it. Producers will be dissatisfied with their returns, and it is no satisfaction in handling candied comb honey.

Extracted is in fair demand, prices ruling about the same. Beeswax is dull, and declining, 30c per pound being the limit for choice domestic stock, while West India wax sells around 23@24c per pound.
HILDRETH & SEGELKEN

KANSAS CITY, MO., Nov. 16.—The supply of best comb and extracted honey is fair. The demand is also fair. We quote as follows: No. 1 white comb, 24 section cases, $3.00 to $3.10; No. 2, $2.75 to $2.00. No. 1 amber, $3.00; No. 2, $2.50 to $2.75. White extracted honey, 8c; amber, 6@7c. Chunk honey i [illegible] ou cans, 10c. Beeswax, 25@28c.
C. C. CLEMONS PR ODU

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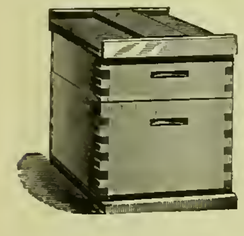

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We are beginning now to replenish our stocks. We shall soon have carload orders coming from the factory. Special orders placed now can have just the attention they need, both here and at the factory, and you may have your goods sent in one of our cars, thereby saving on transportation charges. Regular stock will come straight to you from our warehouse in new unbroken packages, and you can put the goods together in your odd minutes, thereby saving the expense of extra help in the spring.

Our usual discounts for early orders apply again this season—5 percent for cash orders sent in November, the discount lessening one percent per month as the season advances. These discounts mean a considerable saving, and you might as well take advantage of the highest by ordering now. No change of prices has as yet been announced, and you may, therefore, order from your present catalog. If your catalog has been mislaid, write us at once and we will send another.

C. H. W. WEBER & CO.,

2146 Central Avenue, Cincinnati, Ohio

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